



Department for  
Communities and  
Local Government

# Housing Standards Review Detailed Implementation Consultation

Impact Assessment

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<b>Title:</b> Housing Standards Review Detailed Implementation Consultation  IA Number: DCLG /2014_2 <b>Lead Department or Agency:</b> Department for Communities and Local Government  <b>Other Departments or Agencies:</b>	<b>Impact Assessment (IA)</b>
	<b>Date:</b> 10/09/2014
	<b>Stage:</b> Consultation
	<b>Source of intervention:</b> Domestic
	<b>Type of measure:</b> Primary Legislation
	<b>Contact for enquiries:</b> Simon Brown:
<b>Summary:</b> Intervention and Options	<b>RPC<sup>1</sup> Opinion:</b> -

<b>Cost of Preferred (or more likely) Option</b>				
<b>Total Net Present Value</b>	<b>Business Net Present</b>	<b>Net cost to business per year (EANCB<sup>2</sup> on</b>	<b>In scope of One-In, One-</b>	<b>Measure qualifies as</b>
	£1101.5m	£-114.3m (2009 prices)	Yes / No	In / OUT/ Zero Net Cost

**What is the problem under consideration? Why is government intervention necessary?**

A large number of complex, overlapping or contradictory housing standards, which each local authority can require for new homes through the planning system, can add unnecessary build costs for home builders. Housing standards taken cumulatively increase the development costs for home builders and can obstruct growth as the additional costs and effort involved in meeting different standards can cause delays or even make some developments economically unviable. The various local standards are designed to tackle a range of different market and information failures in the construction of new homes. However, the lack of co-ordination across standards and the way they are introduced modified and enforced results in unnecessary costs and complexity.

**What are the policy objectives and the intended effects?**

The policy objective is to simplify and rationalise the large number of standards local authorities can apply to new homes, with the intended effect of reducing the burden housing standards place on new developments. Fewer requirements will reduce or eliminate uncertainty, unnecessary delay and the administrative process costs associated with local standards. Replacing local technical standards with rationalised and optional or mandatory requirements in the building regulations is intended to achieve outcomes more efficiently. This will be achieved through greater transparency and clarity regarding what is required, through standardisation, and through reducing duplication with building control bodies who are already required to carry out third party checking.

<sup>1</sup> RPC – regulatory policy committee

<sup>2</sup> EANCB – equivalent annual net cost and benefit

**What policy options have been considered, including any alternatives to regulation?**

This is a Consultation Stage Impact Assessment following an earlier consultation last year and considers two options.

**Option 1** Do Nothing. This will result in home builders continuing to need to apply a wide range of different local technical housing standards along with uncertainty about when they might be changed, which will add a significant and unnecessary burden on the build cost.

**Option 2** proposes to simplify and rationalise housing technical standards by consolidating essential standards in to a national framework centred on a new form of optional building regulation, and substantially reducing the number of technical standards applying to the construction of new homes. It also proposes to introduce a streamlined mandatory security standard into the building regulations for all new homes.

**Will the policy be reviewed?** It will/will not be reviewed. **If applicable, set review date:** Month/Year

Does implementation go beyond minimum EU requirements?		Yes / No / N/A		
Are any of these organisations in scope? If Micros not exempted set out reason in Evidence Base.	<b>Micro</b> Yes /no	<b>&lt; 20</b> es/no	<b>Small</b> Yes/no	<b>Medium</b> Yes/no
What is the CO <sub>2</sub> equivalent change in greenhouse gas emissions? (Million tonnes CO <sub>2</sub> equivalent)			<b>Traded:</b>	<b>Non-traded:</b>

*I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.*

Signed by the responsible SELECT SIGNATORY: \_\_\_\_\_ te: \_\_\_\_\_

# Summary: Analysis & Evidence

# Policy Option 2

**Description:** Streamlining and simplification of a number of local standards through creating a national set of optional standards and regulations plus a mandatory security regulation.

## COSTS AND BENEFITS TO BUSINESS

Price Base Year 2014	Base Year 2015	Time Period Years 10	Net Benefit (Present Value (PV)) (£m)		
			Low: 677.4	High: 1,878.6	Best Estimate: 1,101.5

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	12.79		12.79
High	19.18		19.18
Best Estimate	15.98		15.98

### Description and scale of key monetised costs by 'main affected groups'

Transition cost for business over 3 years of £16.0m

### Other key non-monetised costs by 'main affected groups'

In some local authority areas, higher levels of environmental and social outcomes, which may be delivered in the Do Nothing option, may not be realised in optional standards. These have not been monetised as this validation Summary Sheet is presenting costs for business only. Further detail can be found in the social impacts section.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low		80.07	696.60
High		219.73	1,891.35
Best Estimate		129.8	1,117.43

### Description and scale of key monetised benefits by 'main affected groups'

Lower build costs due to fewer and streamlined standards. This includes Code energy (£179.34m), Code alternative credits (£37.55m), Water (£39.37m), Access (£333.17m), Security (zero net IN), Space (£107.13m), process savings total £187.49m in general process savings for businesses and an additional £233.37m process savings from different elements.

### Other key non-monetised benefits by 'main affected groups'

A further social benefit from the mandatory security regulation is not included in this analysis of costs and benefits for business. This analysis is included in the social impacts section below.

<b>Key assumptions/sensitivities/risks</b>	<b>Discount rate</b>	3.5
Key assumptions have been made around unit costs and associated savings for building new homes, using detailed analysis by EC Harris. Take up assumptions around the proportion of homes built to a given standard under planning policy have been estimated, for this option over and against the Do Nothing based on a survey of current plans and industry engagement, to address uncertainties in estimating future planning policy. High and Low estimates have adjusted build rate and take up assumptions to reflect uncertainty.		

## BUSINESS ASSESSMENT (Option 2)

<b>Direct impact on business (Equivalent Annual) £m:</b>	<b>scope of OIOO?</b>	<b>Measure</b>
Costs: 1.86	Benefits: 129.81	Net: 127.95
		OUT/Zero net cost

# Evidence Base (for summary sheets)

## Problem under consideration

1. The problem under consideration is the negative impact of the large number of local and national technical housing standards which each local authority can require house builders to integrate in new development through the planning system. Many of the housing standards are complex, can be duplicative or contradictory with each other and also with some aspects of the Building Regulations, and there is significant variation in interpretation between local authorities. There are also multiple unaccountable agencies undertaking compliance checking, but without a single authority able to efficiently resolve conflict or contradictions where these arise.
2. The application of this wide range of housing standards therefore leads to uncertainty, delay and additional process and material costs for house builders particularly where housing standards are set differently by authorities. This can mean house builders have to tailor their housing designs to the requirements of individual local authorities' requirements.
3. Taken cumulatively this increases the development costs for house builders and could be seen to obstruct growth since the additional costs can make some developments economically materially less viable. Demonstrating compliance with additional housing standards typically imposes additional administrative costs for house builders because they have to invest significant resources. House builders are also less capable of achieving economies of scale and improving efficiency because managing a wide range of technical standards displaces activity to improve productivity.
4. With the exception of the Code for Sustainable Homes, the standards adopted are not owned or written by the government. There are a number of problems that arise from this arrangement. The evolution, development and updating of technical requirements are not undertaken in a suitably accountable manner, or within a framework which evaluates value for money or clashes with other standards. Decisions as to how standards change are therefore largely within the gift of the Standard Owner, and there is not sufficient evaluation of the most efficient way to deliver specific outcomes. This can mean that Industry is not able to deliver in the most cost effective way.
5. There is also a lack of robust evidence and evaluation of impacts necessary to enable local authorities to focus on the best way to apply the standards in a way to balance the need for suitable supply with the delivery of high quality housing which responds to local needs. Authorities are therefore also unable to adequately assess the cost impact their individual standards have on the viability of housing in their area.
6. Because the Standard owners are largely non-accountable, they can update their standards and requirements with no advanced warning or transition time. This creates a high degree of uncertainty and risk for home builders and designers who find themselves operating in a changing and unpredictable environment which requires them to invest a great deal of time ensuring they keep up date with changing standards.
7. Each local authority can choose to apply a differing range or combination of housing standards, which increases complexity of compliance generating as it does a wider range of permutations and combinations which designers need to meet. This adds a further layer of cost, complexity and bureaucracy for house builders. Uncertainty relating to technical requirements also increases real and perceived risk, reducing appetite to bring forward new development.
8. The evidence developed by EC Harris shows that without Government intervention the number of local authorities adopting standards in to their policies will continue to increase. It is also likely that the number of different standards available for use in policy will also

continue to increase with the potential for a commensurate increase in the number of compliance regimes and systems.

## Rationale for intervention

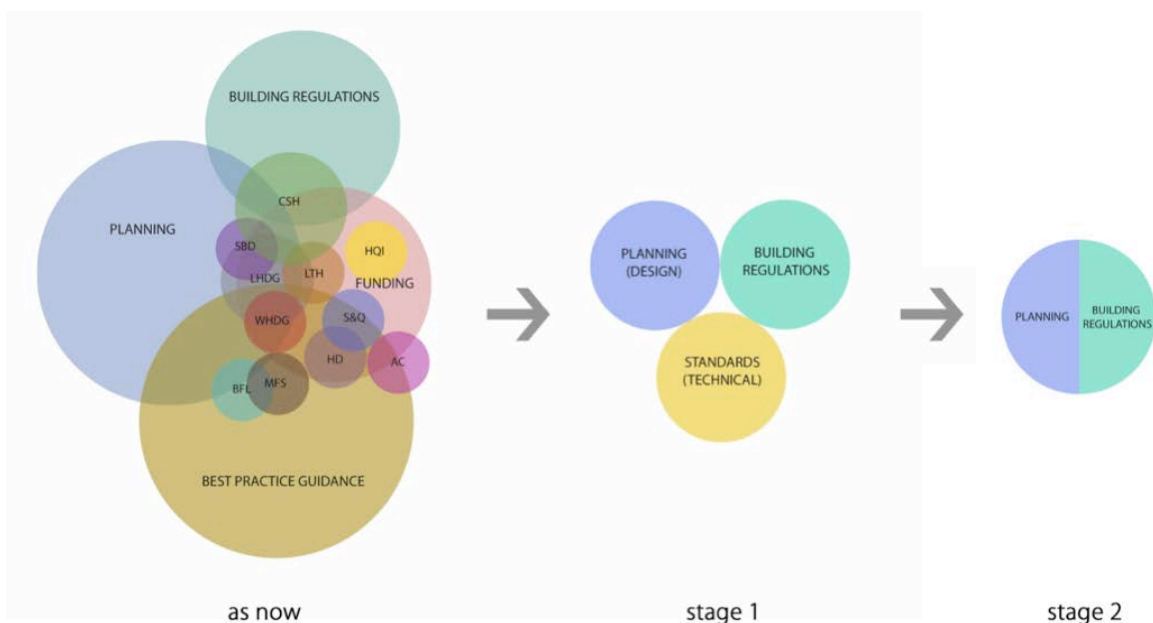
9. Local Authorities typically apply standards in order to respond to a range of different market failures in the construction of new homes, including externalities, information failure, market power, agency split incentives and public goods issues.
10. However, the lack of co-ordination across standards and the way they are introduced, modified and enforced undermines the effectiveness of efforts to correct for such market failures. This results in unnecessary costs, uncertainty and delay being incurred by house builders.
11. An independent review by Sir John Harman in 2012 found that local housing standards tend to have been developed in isolation and without regard to each other. The review also found that the majority of standards are overly complicated and recommended a more structured, government led programme to negotiate between the various owners to deliver a more coherent set of requirements for home builders, consumers and authorities.
12. This consultation is the second consultation on proposals to rationalise the existing range of standards required of new housing development and applied through local authority planning policy. The first consultation looked at the key principle issues as to which standards should be retained, provided an illustrative set of technical standards for consideration and discussed the principles of how the policy might be implemented.
13. On 13 March 2014 Stephen Williams announced the outcomes of the review – a link to the statement and the supporting document [is here](#). In summary, the Government proposes to take forward integration of a preferred mandatory security standard, an optional tighter water efficiency standard, and two optional higher standards for accessibility in to the Building Regulations.
14. A National Space Standard will also be developed to rationalise application of requirements for new dwellings in this respect, and the Government will pursue a Building Regulations only approach to energy efficiency through implementation of zero carbon policy.
15. The decision to more immediately integrate the majority of these optional standards into the Building Regulations has been taken to minimise disruption and maximise savings to industry. The Government has committed to implementing these proposals as quickly as possible. This Impact assessment supports consultation on the proposed detailed technical requirements for the new Optional Requirements in the Building Regulations, as well as the proposed Nationally Described Space Standard. The consultation also sets out Government plans for implementation and transitional arrangements

## Policy objective

16. The policy objective is to simplify and rationalise the large number of local housing standards local authorities can apply to house builders, with the intended effect of reducing the burdens housing standards place on new developments. The aim is also to reduce the direct cost of standards to development in order to maximise their cost effectiveness and to deliver compliance through a single point of contact wherever possible to minimise costs and bureaucracy. This approach will deliver a level playing field for both local authorities and developers by eliminating much of the uncertainty and administrative cost associated with the current application and assessment of local housing standards. By reducing costs and burdens on house builders it is anticipated that more housing development will become economically viable.

17. The review is also intended to identify where there is a legitimate need for standards beyond those set within the current Building Regulations in order to respond to legitimate local needs drivers and to enable the delivery of high quality, sustainable and accessible housing. Essential safeguards have been protected, and whilst the number and variety of technical requirements has been significantly reduced, the Government has identified a small number of remaining areas (security, water efficiency, accessibility and space) where a standard should be retained in some form, for example to safeguard sustainability, health and safety, or important access considerations. These have been rationalised with a view to minimise cost to industry and to maximising cost effectiveness in meeting the relevant objectives for that standard.
18. The review also sought to identify the most simple and cost effective approach to compliance. This will primarily be delivered by integrating existing standards in the Building Regulation compliance framework as Optional Requirements. Utilising the Building Regulations and existing Building control framework to assess compliance minimises process costs and transitional costs for industry, who are already familiar with the functioning of this system. To do this, the Government is taking forward amendment of the Building Act through the Deregulation Bill (currently making its way through parliament) in order to enable the introduction of Optional Requirements. An Optional Requirement is a new form of Building Regulation that is not mandatory in all circumstances, but instead is applied at the discretion of a planning authority (by condition). It can only be applied through a plan policy, the need for which must be fully justified and subject to a viability assessment.
19. A final objective of the review was to find a way to ensure authorities did not layer on additional standards, through the planning process, outside of those developed through the review. The consultation sets out the principle of how a planning statement will set National Policy in order to ensure that this is the case. Guidance on what local authorities will need to evidence and consider in choosing to adopt the Optional Requirements will be integrated into national planning guidance and the principles of what this guidance might include are also discussed within the consultation document.
20. Figure 1 visualises the problem of the wide number of standards which coexist and overlap with Building Regulations, planning and best practice guidance. The diagram also presents the policy objective of a simplified new standards regime Based around a clear separation of responsibilities between the planning system and the Building Control System.

**Figure 1** current standards and potential outcome





# Proposed Building Regulation Requirements and Nationally Described Standards

## Energy

21. Part L of the Building Regulations sets minimum standards for new homes. The standards have been strengthened twice under this Government. In 2010 the carbon dioxide emission target was raised by 25%. From April 2014 the regulations now ensure a mandatory level of fabric energy efficiency alongside a tougher Carbon Dioxide (CO<sub>2</sub>) emission target.
22. This means that all new homes must meet a high level of energy efficiency through the provision of condensing boilers, high performance windows and thermal insulation. This will go some way to meeting the Carbon Dioxide emission target, but will not meet it completely. Developers then have a choice – they can either strengthen the energy efficiency of a home further, or they could choose to provide some additional renewable technology such as solar panels to help meet the emission target.
23. Prior to the steps taken by the Government in 2010 and 2014, it was perceived that Part L standards were not high enough to tackle concerns about energy efficiency and climate change. This led to the creation of the Code for Sustainable Homes in 2007, and the Planning and Energy Act in 2008.
24. The combination of the Code and the Planning and Energy Act allowed local planning authorities to set standards requiring energy efficiency measures and renewable technology over and above the requirements in Part L of the Building Regulations.
25. The Government announced in June 2014 that it would be taking further steps from 2016 to raise the requirements of Part L further in respect of the energy efficiency and carbon emissions targets. This will be done after full consultation with industry and will be subject to a separate impact assessment that considers the costs and benefits of doing so.
26. The Government now considers that the Code for Sustainable Homes has done its job, and now is a suitable time to reconsider the need for the energy efficiency powers in the Planning and Energy Act. Whilst they have been successful in driving up performance of homes, there have been the unintended consequences of local standards that are explored elsewhere in this impact assessment.
27. The policy proposal consulted on as part of the Housing Standards review was therefore to move to a Building Regulations only approach to new homes. The level of support for this proposal was 63%.
28. From 2016 local authorities will not be able to require energy efficiency measures above Building Regulations. There will be a national standard for all new homes set at around the level in the Code for Sustainable Homes level 4. Until such time as zero carbon policy is in place nationally from 2016, local authorities will be able to continue to ask for higher standard on energy but have been encouraged to not go above Code level 4.

## Water

29. Minimum water efficiency standards were introduced into the Building Regulations in 2010. The provisions require that all new homes are designed so that their calculated water use is no more than 125 litres per person per day. Water use is calculated by using the methodology set out in the Water Efficiency Calculator for New Dwellings (“the Water Calculator”).

30. In addition, local planning authorities can currently require standards over and above the national minimum. These standards can require, in effect, water efficiency measures ranging from relatively small-scale (for example, more efficient taps and showers) to more substantial things such as the need to incorporate rainwater harvesting or / and grey-water systems.
31. A water standard is required locally in one of two ways – either through a more wide-ranging local sustainability requirement to build to a specific level of the Code for Sustainable Homes or through a water-specific local standard. The survey work undertaken by EC Harris suggests that 58% of local authorities have a policy requiring (at least some) new homes in their area to be built to a particular level of the Code for Sustainable Homes. A further 12% have a water-specific standard. Further details of this Survey are outlined below and contained in the accompanying EC Harris Survey report.
32. The original consultation on housing standards showed that there was overwhelming support for a regulatory baseline, but a fairly even split in views around the levels of that baseline and then whether there should be additional local standards available.
33. On balance, and in line with other parts of this review, it is proposed to maintain a national regulatory baseline, but to allow one further tighter standard to be imposed locally where there is a clear local need. This would be equivalent to the Code Level 3/4 standard which is already required by many authorities. However, higher standards equivalent to Code Level 5/6 will not be acceptable as they, in effect, require new homes to incorporate grey-water/rainwater harvesting which is not only relatively expensive (£900-£2,700 per unit as set out further in this Impact assessment), but also have cost impacts in relation to on-going maintenance and energy use.

## **Access**

34. Survey work for the Department for Communities and Local Government by EC Harris indicates that a significant number of local authorities have policies on accessible housing. Currently it is estimated that 42% of local authorities have a policy requiring compliance of all or some of new housing development with the Lifetime Home Standards – and that a further 34% have a policy encouraging (but not mandating) compliance. This suggests that 76% of local authorities have a policy on Lifetime Home Standards. The actual requirements of these policies range from a proportion of new housing (20-30%) up to 100% of new housing (as in the London Plan).
35. The Lifetime Home Standards was originally developed by the Joseph Rowntree Foundation as a standard intended to make homes more readily adaptable to peoples' changing needs over time. The standard has been developed over time and is now managed by Habinteg Housing Association. Compliance is typically assessed by a planning authority access officer, a code assessor or Habinteg Housing Association. Local authorities have also developed varying interpretations of the Lifetime Home Standard further complicating cost effective delivery of compliance.
36. The same survey indicates that 17% of local authorities have a policy requiring a proportion of homes be built to a wheelchair housing standard. A further 9% have an aspirational policy which encourages development of wheelchair housing but stops short of an actual requirement, meaning that 26% of local authorities have a wheelchair housing policy of some form. Requirements vary from a very low number of properties to requiring as much as 10% of new development to meet wheelchair accessible standards.
37. Wheelchair accessible housing standards have developed over a considerable period of time. The most commonly recognised standard is the Wheelchair Housing Design Guide, currently owned by Habinteg Housing Association. However, this standard has not been

developed for a number of years, and many local authorities have built upon its requirements to develop their own bespoke standards typically responding to particular circumstances in their local area. This means that there is no nationally accepted standard.

38. Where wheelchair housing and the Lifetime Home standards apply, properties are also required to meet the requirements of Part M of the Building Regulations, meaning that at least two compliance regimes will be relevant to each dwelling. In addition, the lack of national consistency makes delivering accessible and adaptable housing more expensive, complex and risky.
39. The Government proposes to replace these varying standards with two new Optional Requirements in the Building Regulations. The Lifetime Home Standard will be replaced by Category 2 – Accessible and Adaptable Housing, and existing wheelchair housing standards will be replaced by Category 3 – Wheelchair user dwellings in Part M (Access to and use of buildings). The Government does not propose to make any changes to the existing technical requirements of Part M, but the guidance in Approved Document M will be restructured to fit within the framework which integrates the new optional requirements – 94% of respondents to our previous consultation supported proposals to restructure existing guidance in this way.
40. The New Optional Requirements have been developed following further consultation with an industry group and have been developed from the Level 2 and Level 3 proposals which were published in the previous illustrative technical standards consultation. Responses to consultation were very supportive of these requirements – 69% of respondents thought the proposals to replace Lifetime Homes (Level 2) were about right, whilst 74% of respondents thought the proposals for replacement of the Wheelchair Housing Design Guide (Level 3) were about right.
41. The proposals on which we are consulting have been further evaluated in terms of both the way in which they are applied, and the technical requirements that are included to maximise cost effectiveness. This has enabled us to deliver significant savings without affecting the overall benefits of the standards being applied.

## **Security**

42. There is no Building Regulation currently covering the physical security of homes. However, as part of a range of measures to improve local security and reduce crime, authorities often apply the Association of Chief Police Officers “Secured by Design” standards (Part 2). This sets a wide range of specific standards and design advice for doors, windows, external lighting, cycle storage, communal facilities and home offices. It is also used in conjunction with a range of neighbourhood wide security measures (e.g. Secured by Design Part 1). Assessment of compliance is provided by police crime prevention design advisors. The new housing market currently provides a basic level of security measures on most, but not all, new homes through housing warranty agreements.
43. The new Option 2 proposal is for a requirement to be introduced into the Building Regulations covering security standards for doors and windows. The intention is to capture the majority of benefits delivered by current planning requirements to comply with Secured by Design standards but focusing on security standards for doors and windows and using the existing building control system to deliver compliance, thus reducing both capital and process costs.
44. We have developed a new Approved Document Q covering the requirement for security. This provides that doors and windows would meet the Publicly Available Specification 24 standard. This is a well-established standard in the UK. The Secured by Design standard also uses Publicly Available Specification 24 in addition to other provisions such as external lighting. Limiting the new Approved Document to Doors and Windows and by offering an

alternative to using security tested garage doors, costs are kept to a minimum, while providing a similar resistance to burglary.

45. Several respondents to the previous consultation argued that the cost estimates for the impact of Secured by Design standards were incorrect. However, some considered they were too high and some too low. EC Harris, with the support and advice of several industry partners, has carried out an extensive review of the costs of Secured by Design and the proposed new Approved Document. These revised costs form the basis of this impact assessment.

## **Space Standards**

46. Survey work by EC Harris in support of the Housing Standards Review indicates that 33% of local authorities in England have policies requiring some form of space standard or specification relating to the internal layout of some or all new homes. A further 22% have some form of aspirational policy which seeks to incentivise, but does not require a space standard, suggesting that 55% of local authorities have a policy of some form on internal layout and space.

47. The standards adopted typically fall into two categories; those which apply only to affordable housing, where the most common standard adopted is the Home and Communities Agency legacy space standard; and those which require standard across tenure where the most commonly adopted standard is equivalent or similar to the space standard adopted in the London Plan.

48. However, the way in which these space standards are adopted and assessed, and their actual requirements, are very variable. This creates significant difficulty for developers and designers working across local authority boundaries in ensuring compliance, and in the number of house types that are required within a limited geographical area. Unlike some other technical standards – such as security – even a small variation in space requirement can require extensive re-design of a property type or types. This variation also creates higher risk in assessing development viability and can affect developer's choice as to whether to take forward new development.

49. The Government has decided that it is appropriate for local authorities to have the right to influence the size and nature of development in their local area, but is of the view that this will be most effectively delivered through the development of a single national space standard which local authorities can choose to adopt, subject to ensuring that viability is not affected. The Government's proposals are therefore a rationalisation of all of the existing space standards currently being applied nationally.

50. The proposals in the consultation accompanying this Impact Assessment have been developed following further engagement with industry and are based on the illustrative technical standards set out in the 2013 consultation. The proposed Nationally Described Space Standard has been further refined and simplified and now consists of a single set of Gross internal Areas which represent a good level of internal provision for new dwellings. The standard incorporates requirements for internal storage, minimum bedroom size and a suggested minimum floor to ceiling height.

51. Requirements originally included in the previous consultation for additional space where utility rooms or en-suites are provided have also been removed, as has the requirement for furniture layouts. There was strong support for the space standard at consultation stage with 70% of respondent's suggesting that local authorities should continue to be permitted to set standards across tenure in their local areas, and 80% supporting the development of a national space standard.

52. The proposed standard has rationalised existing standards in order to ensure that new homes meeting the standard provide the same level of habitable space in flats and houses.

Overall, the proposed standard will reduce construction cost compared to the do nothing option, but will also significantly reduce design costs and will support more cost effective delivery of standard housing layouts which can be type approved. This will significantly reduce construction and compliance costs across the country.

## Description of options considered (including do nothing)

### Option 1 – do nothing

53. This would fail to address the substantial costs facing house builders from the current structure of local standards. These costs impact on the potential for house builders to take advantage of market opportunities and can also impact on the viability of some sites, particularly in areas where land prices are low.

54. It is likely that in the absence of action to simplify and co-ordinate local standards there would be an increase in use and range of local standards over time. This would add further costs to house builders.

55. There is uncertainty regarding the extent and pace of introduction of new standards by local authorities as well as the extent of evolution of standards over time under the current situation. Initial estimates of these have been made below, assumptions on which these estimates are based have been explained and are being tested through this consultation. The costs are likely to be substantial and grow over time.

### Option 2 – simplify and rationalise local housing standards

56. Option 2 aims to simplify and rationalise housing standards by consolidating essential standards in to a national framework centred on the building regulations and reducing substantially the number of technical standards applying to the construction of new homes.

57. The proposed consolidated standards are described below by each theme:

- Accessibility – two Optional Requirements above Building Regulations minimum requirements
- Energy – no additional standards above Building Regulations
- Water – a single Optional Requirement for water efficiency above Building Regulations minimum requirements
- Security – a single Mandatory Requirement for robust door and window security
- Space – a single tier national space standard.

# Monetised and non-monetised costs and benefits of each option (including administrative burden)

## General assumptions

58. The 2013 Consultation Impact Assessment<sup>1</sup> made a range of general assumptions to estimate the impact of the policy which were applied to each local standard. These have been re-costed and underlying assumptions reassessed following further work and in the light of responses to the consultation.
59. For this Impact Assessment, consultants EC Harris has drawn on its extensive experience in the construction industry to undertake more detailed cost analysis in the light of the consultation responses.
60. This document should be treated as part of an Impact Assessment bundle which consists of an EC Harris Costs Impact Report with Appendices, an EC Harris Local Authority Policy Survey and a Department for Communities and Local Government Housing Standards Review Evidence Report produced by Adroit Economics.
61. EC Harris has revised and substantially developed the “Cost Impacts” Report together with the Appendices they produced for the 2013 consultation. It accompanies this document as part of the bundle. In addition, EC Harris undertook a survey of local authority plans to inform assumptions about take up of standards in planning policy. The EC Harris Survey Report also accompanies this document. Details of how the survey was carried out and what it covered are contained in that report with further information picked up in the Adroit Economics Evidence Report. The Adroit Economics, Evidence Report outlines the evidence for making informed assumptions used in the cost benefit analysis based upon the raw EC Harris data. The following sections draw widely on the evidence presented by consultants in each of these three documents which should be seen as an integral part of this Impact Assessment.
62. The 2013 consultation Impact Assessment assumed that homebuilding in England would increase by 3-6% per annum. Since then the baseline for homebuilding completions in 2013 has been demonstrated to be below that, but at the same time the most recent statistics for housing starts shows a sharper increase in new homes in the pipeline.
63. The Adroit Economics Evidence Report draws on private projections by Savills<sup>2</sup> and others, to revise the estimate. They reflect a higher forecast rate of increase in homebuilding than assumed at consultation. Further evidence to inform the assumptions used is outlined in Section 3 of the Adroit Evidence Report. For this latest work, and bearing in mind the lower baseline, we have therefore assumed a 3-8% increase in homebuilding over the appraisal period with a central estimate of 5%. This is indicative for this impact assessment only and does not represent a forecast of future build expectations or a housing target. Neither do the projections reflect the expected rise in house building as a consequence of the Government’s housing policies. The High estimate is assumed to be capped at 221,000, the

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<sup>1</sup> Summary of Responses and Impact Assessment link: <https://www.gov.uk/government/consultations/housing-standards-review-consultation>

<sup>2</sup> See What Next for Housebuilding Graph 5.1 [http://www.savills.co.uk/research\\_articles/141558/172709-0](http://www.savills.co.uk/research_articles/141558/172709-0)

level of projected increase in the number of households based on Department for Communities and Local Government statistics<sup>3</sup>.

64. The build mix assumptions assumed are based on data for different building types in new build from the National House Building Corporation<sup>4</sup> and Department for Communities and Local Government house building statistics table 254<sup>5</sup>.

**Table 1: – indicative new home completion assumptions for England**

<b>Year</b>	<b>Low (3%)</b>	<b>Medium (5%)</b>	<b>High (8%)</b>
<i>2013 (actual):</i>	<i>109,700</i>	<i>109,700</i>	<i>109,700</i>
2014	112,900	115,100	118,400
2015	116,300	120,900	127,900
2016	119,800	126,900	138,100
2017	123,400	133,300	149,200
2018	127,100	140,000	161,100
2019	130,900	147,000	174,000
2020	134,900	154,300	187,900
2021	138,900	162,000	203,000
2022	143,100	170,100	219,200
2023	147,400	178,600	221,000
2024	151,800	187,600	221,000
<b>Total</b>	<b>1,446,600</b>	<b>1,635,800</b>	<b>1,920,900</b>

65. As in the 2013 Consultation Impact Assessment and in previous construction related Department for Communities and Local Government impact assessments, we have estimated the value of hourly savings in administrative time through two sources, the EC Harris database of professional fees and the Standard Cost Model which proposes taking the Annual Survey of Hours and Earnings and adding 30% for additional overheads (such as pensions and national insurance contributions)<sup>6</sup> and throughout the Impact Assessment, a 50% weighting for each of the EC Harris database and Annual Survey of Hours and Earnings +30% is used to calculate the central estimate below. Further details and the resulting time costs for different professions can be found in the EC Harris Cost Report Section 2.7. We refer to this below as the ‘blended’ value.

## **Transition and phase-in of new policy**

66. The analysis below is based on an assumption that the policy would begin to take effect from 2015. A phase-in is assumed based on estimates of the impact of the transition process through which the current standards will be removed and the new proposed standards will be introduced. In the previous consultation it was simply assumed that a linear process would occur with 25%, 50% and 75% of savings realised over a 3 year period.

<sup>3</sup> <https://www.gov.uk/government/publications/household-interim-projections-2011-to-2021-in-england>

<sup>4</sup> National House Building Council Quarterly Statistics, Housing Market Report, April 2014.

<sup>5</sup> <https://www.gov.uk/government/statistics/house-building-in-england-october-to-december-2013>

<sup>6</sup> ASHE: <http://www.ons.gov.uk/ons/rel/ashe/annual-survey-of-hours-and-earnings/index.html>, Standard Cost Model <http://www.berr.gov.uk/files/file44503.pdf>

67. For this impact assessment we have worked with Adroit Economics and EC Harris to make an informed estimate of the pace at which cost savings would occur given the details of the new standards and the preferred transition process proposed in this consultation.
68. The preferred transitional approach is to allow a limited six month period when the existing standards (on water, access, space and security) can be applied and then to allow local authorities with existing standards to 'passport' these standards to the nearest new equivalent optional standard where such a standard exists.
69. The Housing Standards Review is expected to be implemented (and take effect on construction) from mid-2015. Therefore, the analysis is based on this timeframe. The description below relates to the granting of planning permission. The associated cost/saving related to them will depend on when the planning permission is implemented and the dwellings built. Savings are primarily realised through reduced costs of standards (in terms of construction) as well as reduced process and administrative costs.

## Permissions Pre-Policy

70. As the policy will not be retrospective, for developments which already have permissions it is reasonable to assume that these will be built to the current standards. This will constitute the majority during 2015 but is expected to reduce sharply, as homes are increasingly built to permissions that do not contain the more costly 'old' standards. However, it is also expected that a small proportion of developments will still be built to pre-policy permissions into 2017, as some sites with existing permissions will take longer to build out.
71. After considering the process carefully and discussing build out times with industry specialists we have assumed the following proportion of new homes for which build costs are incurred will bite in each year.

**Table 2: Assumed proportion of new dwellings built to previous permissions**

2015	2016	2017	2018
80%	30%	10%	0%

## Permissions granted during the six month transition

72. From the time the Housing Standards Review is implemented the only technical standards that will continue to be applied through planning permissions locally will be on the five key themes - energy, water, access, space and security. All other standards will no longer be able to be imposed.
73. For instance a broad requirement to meet a particular 'Code for Sustainable Homes' level will no longer apply. A plan policy which specifically requires building to lifetime homes standards, which is under the 'access' theme, would continue to apply but delivery of a home to this standard as an indirect effect of achieving points for a Code for Sustainable Homes level, would no longer apply.
74. For these first 6 months, for water, space, security and access the 'old' existing standards could continue to be applied based on existing plans, rather than the optional new requirement or national space standard. After considering the process carefully and



discussing transition arrangements with industry specialists we have assumed, based on experience of the construction process, the following proportion of new homes for which build costs are incurred will bite in each year.

**Table 3: Assumed proportion of new homes built to permissions granted during the 6 month transition**

2015	2016	2017	2018
15%	40%	5%	0%

**Permissions granted after the 6 month transition**

75. The above transition period will finish after 6 months. Following that period the preferred intention is to “passport” existing standards to the nearest equivalent optional new requirement or standard.

76. For instance a lifetime homes policy contained in an existing plan would be ‘passported’ through to the new category 2 optional requirement in Part M or a Code 3 water efficiency standard to the new optional requirement in Part G. Where the old standard was higher than the new optional requirement, the lower new requirement would apply. For instance, a higher water requirement at Code level 5 and 6 would be applied just to the lower optional requirement.

77. After considering the process carefully and in the light of comments at consultation we have assumed the following proportion of new homes for which build costs are incurred will bite in each year.

**Table 4: Assumed proportion of dwellings built to post transition permissions**

2015	2016	2017	2018
5%	30%	85%	100%

78. For energy standards, because of the introduction of a zero carbon build standard, the arrangements are slightly different. This is considered in more detail in the Energy section below.

**Code for Sustainable Homes – Energy.**

79. The Code for Sustainable Homes is a voluntary national environmental standard which rates and certifies the performance of new homes, measuring the sustainability of homes against nine categories, including energy and providing a six level rating system.

**Current position**

80. Part L of the Building Regulations sets energy requirements for new homes. From April 2014 the regulations now set a carbon dioxide emission target and a mandatory level of fabric energy efficiency.

81. This means that all new homes must meet a high level of fabric energy efficiency through the provision of condensing boilers, high performance windows and thermal insulation. If further measures are required to meet the carbon dioxide targets, then developers are free to decide how to achieve this.
82. Some local authorities ask for further energy related standards on homes in addition to the requirements in the Building Regulations. This has most commonly been done via the standards in the Code for Sustainable Homes.
83. On energy, developers who are required to meet additional Code standards based on levels 4, 5 and 6 (which are above the current requirements in the Building Regulations) must meet a mandatory additional dwelling emission rate and can then choose whether to meet further voluntary energy efficiency standards.
84. The EC Harris Survey Report shows that 58% of local authority plans surveyed include a requirement to build to Code for Sustainable Homes Level 3 or 4, with some additional references to Code levels 5 or 6.
85. Whilst the Code has been successful in driving up the performance of homes in the absence of national policy for zero carbon homes, there have been costs for homebuilders (see sections below and additional analysis reports).

## **New policy**

86. Due to concerns about the costs and complexities of meeting Code based requirements, the policy proposal consulted on as part of the Housing Standards review was to move to a building regulations only approach to new homes alongside the development of zero carbon policy from 2016.
87. On this basis, the Government has confirmed that:
- from 2016 the on-site requirements for new homes under Part L will be strengthened by 19% tighter than the new standard introduced in April 2014. A further consultation will be issued on the detail of this proposal.
  - from late 2016, local authorities will no longer be able to require energy efficiency standards above the Building Regulations; and
  - between now and 2016, local authorities with existing Code based policies will be encouraged to limit extra requirements to a 19% improved dwelling emission rate above the building regulations based on the requirements for dwelling emission rates under Code level 4.
88. The policy proposal for the delivery of zero carbon homes was not finalised when the earlier consultation stage impact assessment was published. This cost and benefit analysis is therefore markedly different than at that stage. Estimated savings for this area of housing standards are not as substantial as in the 2013 analysis – this is because of the smoother continuity between the current practice and the introduction of the zero carbon build standard from 2016

89. Impacts have been modelled to include the amendment proposed for the Planning and Energy Act (ie in relation to Code and energy policies) but this is subject to Parliamentary approval.

## Costs and benefits

### Do nothing – Option 1

90. EC Harris has undertaken a further cost analysis of complying with the different Code levels taking into account consultation comments and obtaining updated cost estimates.

91. The analysis is reported in detail in the accompanying EC Harris Cost Report and the results presented, for different dwelling types, in Table 9 of that report. The cost for the energy credits is outlined in table 10 of that report. The result for a 3 bedroom semi-detached is summarised in the table below.

**Table 5: Code for Sustainable Homes Cost estimate – 3 Bedroom Semi Detached house**

Code Level	Cost all credits	Cost Energy credits only
Code Level 1	-	-
Code Level 2	£40	-
Code Level 3	£46	-
Code Level 4	£790	£741
Code Level 5	£17,668	£12,855
Code Level 6	£25,939	£21,806

NB: Central estimate for medium sized 50 dwelling development.

92. The costs above are based on a medium sized development of 50 dwellings, although costings for a small and large development are also contained in the EC Harris Cost Report. The Cost Report appendices also provide a full breakdown of the estimated costs for each Code credit.

93. The estimated cost of building Code Level 4 is significantly lower than in the August 2013 assessment. This reflects learning benefits, as a significant number of Code Level 4 homes have been completed over recent years, and the lower estimated cost of solar photovoltaics.

94. The costs for Code levels 5 and 6 are estimated by EC Harris to be slightly higher than in August 2013, which reflects far less experience of building to these higher Code levels and more detailed analysis of the costs.

95. Where a renewables approach is adopted, EC Harris concluded that the cost of these technologies has decreased within the last twelve months. However, EC Harris has also incorporated Mechanical Ventilation and Heat Recovery costs within Codes 5 and 6 which were not originally incorporated. The work around Code Level 5 is significantly more developed which has identified in certain instances an enhancement to specification. Further details are contained in the EC Harris Cost Report, Section 3.2.

96. As for the August 2013 assessment, we have made an assumption that the cost of building to the Code will fall over time. This assumption was supported during the consultation where some consultees pointed to evidence that the cost of Code 4 has fallen over recent years as more builders have gained experience of building to the level and technology, such as solar photovoltaics. Parsons Brinckerhoff undertook detailed analysis of the cost of solar

photovoltaics in May 2012 which included estimates of price reductions over time. As solar photovoltaics is an important cost element in the higher code levels, we have used those assumptions as a basis to estimate the following reductions in the cost of the Code over time.

**Table 6: Assumed annual reduction in costs due to learning**

2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
3.5%	3.2%	3.0%	2.7%	2.4%	2.2%	2.0%	1.9%	1.7%	1.6%

Source: Solar PV Cost Report May 2012. Parsons Brinckerhoff

97. The largest energy cost for higher Code levels is from the mandatory carbon compliance requirement although the Code has a number of other energy credits available which have cost implications. For Code Level 3 there is no carbon compliance cost as this standard is now required from building regulations. The baseline for the Do Nothing analysis against which the costs above are measured is the current building regulations Part L standard which was introduced in April 2014. From 2016 the baseline moves to the zero carbon build standard. This has been estimated for this analysis as the carbon compliance Code 4 level onsite plus a payment towards offsite ‘allowable solutions’ which is estimated at £60 per tonne, which was the central estimate in the government’s 2013 allowable solutions consultation<sup>7</sup>.
98. For example a Code Level 5 semi-detached 3 bedroom house faces an extra cost over current building regulations of £12,855 (from Table 5 above) before learning – which reduces to £11,654 by 2017 using the learning rate reductions in Table 6 above. But due to the new zero carbon build standard, the baseline cost increases by £2,889. This is made up of a £672 extra over cost of meeting Code level 4 onsite (after learning is taken into account<sup>8</sup>) plus an estimated £2,217<sup>9</sup> allowable solutions cost.
99. This gives the extra over cost for energy of a Code 5 home in 2017 against the zero carbon build standard of £8,764. So Code 5 remains a significant extra cost even on top of the zero carbon standard.
100. It has been assumed that this zero carbon standard will phase in over time, based on evidence from previous changes to building regulations. The assumed phase in profile is outlined in the table below.

**Table 7: % of homes built to zero carbon standard**

2017	2018	2019	2020	2021	2022
10%	35%	55%	75%	90%	100%

## Code process costs

101. EC Harris has also produced an updated estimate of the Code process and administrative costs. These are the transaction costs associated with ensuring that a development fulfils the relevant criteria of the Code through their design and build procedure and obtaining an appropriate certificate.

<sup>7</sup> <https://www.gov.uk/government/publications/next-steps-to-zero-carbon-homes-allowable-solutions>

<sup>8</sup> £741 from Table 5 reduced by learning according to Table 6 down to £716 in 2015, £693 in 2016 and £672 in 2017.

<sup>9</sup> Estimated at just over 1.2 tonnes per year residual emissions from Code 4, over 30 years at £60 per tonne.

102. EC Harris has investigated the time and administrative costs house builders incur when complying with the Code.

**Valuing time**

103. Estimates of hourly process costs are based on the blended price of two sources, the EC Harris database and the Standard Cost Model as explained in the General Assumptions above.

104. Using the blended hourly rate EC Harris has estimated a process cost for each Code level based on the credits being required. Further detail of the EC Harris estimate for costs of each of the credits can be found in the appendix of the EC Harris Cost report. Table 11 of the EC Harris Cost report summarises the total process costs at each Code level and the unit process cost per dwelling for different sized developments. The medium sized scheme costs are outlined in the table below.

Code Level	All credits	Energy credits only
1	£117	£23
2	£117	£23
3	£125	£23
4	£136	£29
5	£228	£109
6	£228	£109
Code BRE Fee	£37	

Medium sized 50 unit development. Details: EC Harris Cost report Table 11.

105. Consultation responses have suggested that Code process costs have already been optimised to minimise costs involved since the Code was launched in 2007 and so it is reasonable to assume that they will remain constant in real terms over the 10 year appraisal period. EC Harris have provided a detailed breakdown of the process cost associated with each credit of the Code in the Appendices of their report, which explains the hours required to ensure compliance with the credit.

**Take Up – Do nothing option.**

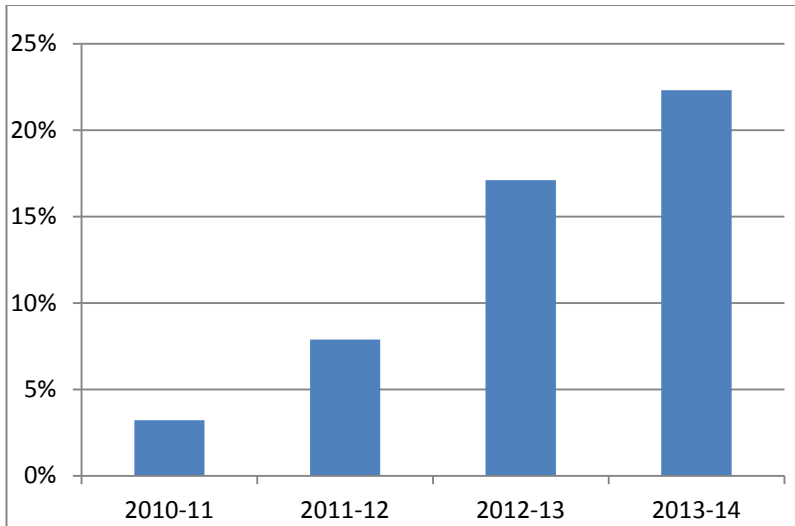
106. The ‘Do nothing’ assumes that the pre-Housing Standards Review trend of a growing use of local standards continues. For the Code the EC Harris survey of planning policies is supplemented by published statistics of Code use<sup>10</sup>.

107. At consultation it was assumed that the proportion of homes built to the Code would remain constant. The new and more detailed survey research undertaken for this Impact Assessment suggests that this assumption is likely to underestimate the proportion of homes built to the Code over the appraisal period.

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<sup>10</sup> <https://www.gov.uk/government/collections/code-for-sustainable-homes-statistics>

108. The 'Adroit Evidence Report' analyses trends in the inclusion of Code requirements in plans in detail in Section 8, and uses this evidence as the basis for a recommended uptake assumption of the Code over the appraisal period. For example the chart below, taken from the Adroit Report, shows the proportion of private completions in England which are built to the Code.

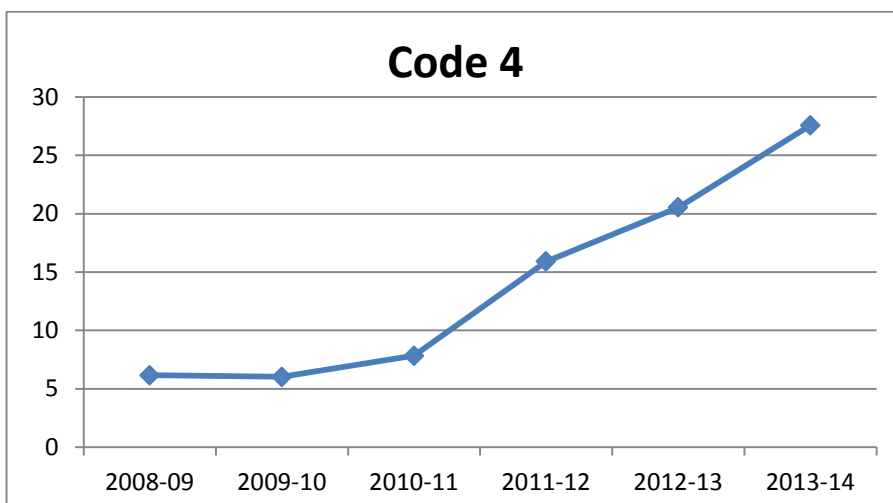


Code 'Post Construction' certificates as a proportion of 'Completions'.

109. Using the Adroit Evidence Report recommendations based on Post Construction certificate statistics, it is therefore assumed that under the Do Nothing there would be a steady increase in the proportion of all homes (private and social) built to one of the Code level standards over the appraisal period from the current estimated level of 46% in year 1 (2015) up to 62% in year 10 (2024).

110. In addition to a trend increase in the proportion of homes built to one of the Code standards, there has been an increase in the proportion built to higher levels of the Code. This was re-enforced by the EC Harris planning survey which concluded that in general the later the date of a policy update the higher the Code for Sustainable Homes level required. Again details can be found in Section 8 of the Adroit Evidence Report.

111. The Chart below taken from the Evidence Report illustrates specifically the trend change of the proportion of homes being built to Code Level 4.



Proportion of Code homes built to Level 4

112. Based on the Adroit Evidence Report, this impact assessment assumes that there is a 5% increase annually in the proportion of Code homes built to level 4 over the appraisal period. This is the average annual increase over the period 2009-14.
113. The EC Harris Survey Report also showed evidence of a higher proportion of plans with aspirational Code targets, including identifying 4% of authorities in the Survey already encouraging/ seeking Code 5 from large or greenfield developments. A further 18% of the authorities surveyed stated a future policy ambition within their plan relating to increasing standards of sustainability, including common references to Code levels 5 and 6.
114. Based upon the survey evidence of existing policies alongside current and future aspirations in local authorities, though taking into account the substantial cost differential associated with Code Levels 5 and 6, the Adroit Evidence Report suggests that there would be a modest increase in the proportion of homes being required to be built to Code Levels 5 and 6. Their report suggests that by 2024 there will be 3% of Code homes built to Code level 5 and 2% to Code level 6 by 2024. We have assumed this increase in the analysis.
115. The proportion built to the lower levels, especially Code level 3 is anticipated to fall away as the higher Code levels would become more common under the Do Nothing, which is consistent with the recent trend outlined in the Adroit Evidence Report.
116. The new estimated proportion of homes built to each Code level is outlined in the table below.

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
<b>Level 1</b>	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>Level 2</b>	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>Level 3</b>	69%	64%	59%	54%	48%	43%	37%	31%	26%	20%
<b>Level 4</b>	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%
<b>Level 5</b>	0%	0%	0%	1%	1%	1%	2%	2%	3%	3%
<b>Level 6</b>	0%	0%	1%	1%	1%	1%	1%	2%	2%	2%

## **New proposal – Option 2**

117. The new proposal is to wind down the Code for Sustainable Homes so that elements specified as a Code standard will no longer be a requirement. In order to smooth the transition to a zero carbon build standard we anticipate that those local authorities with existing Code 4 based policies based on a dwelling emission rate (labelled 'ENE1' in the Code performance rating system) will continue to be able to require them.
118. Local authorities will not be able to ask for standards based on the voluntary credit requirements at ENE2 to ENE9.
119. It is assumed that all standards (ENE1 to ENE9) at Code levels 5 and 6, which would otherwise be introduced over time in plans according to the above table in the do nothing option, will no longer be a requirement.
120. As the transition to the new policy takes place the costs identified below will fall away apart from the costs of ENE1 for Code 4 homes which will in turn fall to zero as the new zero carbon standard is introduced and requires this standard in the baseline. Details of the transition assumptions for energy are outlined in Section 10 of the Adroit Evidence Report.

## Overall Costs and Benefits

121. Based on these assumptions we have estimated the total build and process cost to homebuilders of meeting the Code energy requirements (ENE1 to ENE9) during the appraisal period for both the Do Nothing and the new proposal. The savings identified are primarily from the high cost of all energy requirements for Code 5 and Code 6 homes. In addition the non-ENE1 energy elements of a much large number of Code 3 and 4 homes will no longer be required and there will be significant process savings.
122. The present value build cost for the energy element is £239.3m over 10 years, as calculated in the table below. The present value build cost for the new proposal is £60m. This results in an equivalent annual build cost saving of £20.83m. In addition there is an annual process cost saving of £3.02m. This results in a total equivalent annual saving of **£23.9m** (Low: £11.8m, High: £55.4m).

£m Build Costs	Present Value	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Costs Do Nothing	<b>239.3</b>	14.9	19.4	24.1	25.5	27.1	27.7	28.9	31.5	39.1	48.1
Costs New Proposal	<b>60.0</b>	11.5	10.5	12.4	11.8	9.7	6.3	2.9	-	-	-
Net Impact	<b>179.3</b>	3.3	8.9	11.7	13.7	17.4	21.4	25.9	31.5	39.1	48.1
Equivalent Annual Net:		<b>20.83</b>									

£m Process Costs	Present Value	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Costs Do Nothing	<b>30.90</b>	2.2	2.4	2.7	3.0	3.4	3.7	4.1	4.6	5.1	5.7
Costs new proposal	<b>4.91</b>	1.5	0.8	0.8	0.8	0.7	0.4	0.2	-	-	-
Net Impact	<b>25.99</b>	0.7	1.7	1.9	2.2	2.7	3.3	3.9	4.6	5.1	5.7
Equivalent Annual Net:		<b>3.02</b>									

## Code – Additional Credits

123. The Code for Sustainable Homes makes other requirements in addition to the Energy, Water, Access and Security requirement captured elsewhere in this impact assessment. These requirements enable developers to gain sufficient voluntary credits needed to meet a Code standard, but for any individual credit score, it is only likely to be undertaken if it is cheaper than alternative credit options for meeting the required Code level.
124. These areas include Materials, Surface Water Run Off, Waste, Pollution, Health and Well Being, Management and Ecology. For some of the areas, for instance, ecology, there may be a general planning requirement depending on the location of the development. For instance homes built on the edge of an ancient forest may face more stringent general planning requirements than an urban infill development. Even in these situations there can be a requirement for two ecology assessments, one for the Code and the other for general planning purposes which may be inconsistent. So there will still be savings associated with removing this aspect of the Code. The driver for undertaking a voluntary code credit will be the cost of that credit relative to the alternative available credits rather than the importance



of the issue which the credit is proposed to tackle.

### Option 1 - Do Nothing

125. This will involve more homes being built to the Code for Sustainable Homes in future as outlined in the previous section on ‘Code – Energy Costs and Benefits’.
126. EC Harris has made a detailed assessment of the cost of each Code credit and then estimated the likely cheapest credit mix to meet each level of the Code. This is presented in detail in the Appendices to the accompanying EC Harris Cost Report.
127. To avoid double counting, for this section any costs associated with areas already covered elsewhere in this Impact Assessment have been excluded from the standard. So the table below is for a medium sized development, based on the EC Harris Cost Report Table 10a but excluding water, security and access costs as well as energy. Further details for Small and Large Development can be found in the EC Harris Cost Report and Appendices.

Code Level	1 Bedroom Apartment	2 Bedroom Apartment	2 Bedroom Terrace	3B’room Semi-detached	4 Bedroom Detached	Process (house)
1	-	-	-	-	-	94
2	40	40	40	40	40	94
3	40	40	40	40	40	99
4	40	40	40	40	40	104
5	555	603	753	825	903	101
6	555	603	753	825	903	101

128. Take up assumptions for each Code level are as outlined in the Code – Energy Costs and Benefits’ section.
129. The EC Harris cost report concludes that process costs can be significant, including technical calculations, collating compliance evidence, specialist consultants’ reports or certification. Further details are given in Section 3.2 of the EC Harris Cost Report.

### Option 2 – New Proposal.

130. This assumes that none of the above credits, driven by the decision to minimise the cost of achieving a Code level, will be undertaken, although, where local circumstances require a particular sustainability outcome this could be part of a general planning condition not connected to a standard. There are therefore savings for both process costs and build costs.

### Costs and Benefits

131. The costs and benefits have been estimated taking into account the transition process to the new standard. Details of how the calculations are estimated are contained in Section 11 of the Adroit Evidence Report.

**Table 13: Code – additional credits, costs and savings**

	Present Value	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Do Nothing Build Cost	40.5	3.5	4.1	4.8	5.6	6.5	7.6	8.8	3.5	4.1	4.8
No Nothing Process Cost	124.2	9.8	10.7	11.6	12.7	13.8	15.0	16.3	17.7	19.2	20.8
Proposal Build Cost	2.9	1.9	0.8	0.3	-	-	-	-	-	-	-
Proposal Process Cost	12.0	7.8	3.2	1.2	-	-	-	-	-	-	-
Build Cost Saving	37.5	7.6	8.8	7.6	8.8	7.6	8.8	7.6	8.8	7.6	8.8
Process Cost Saving	112.2	2.0	7.5	10.5	12.7	13.8	15.0	16.3	17.7	19.2	20.8
<b>Total Saving</b>	<b>149.7</b>	<b>2.4</b>	<b>9.3</b>	<b>13.2</b>	<b>16.2</b>	<b>17.9</b>	<b>19.8</b>	<b>21.9</b>	<b>24.3</b>	<b>26.8</b>	<b>29.6</b>

132. Over the 10 year appraisal period a saving of £150m is achieved which equates to an annual equivalent saving of **£17.4m** (Low: £12.2m, High: £25.8m). Of this some **£13m** is a process cost saving whilst the remaining **£4.4m** is reduced build costs involved with achieving the various credits.

## Water - Costs and Benefits

133. Further work has been undertaken following the 2013 consultation impact assessment which concluded that changes to the water standards would result in an equivalent annual saving to business of £2.4m.

### Option 1 - Do Nothing

134. This assumes the current situation with a national baseline delivered through Part G of the Building Regulations and additional local standards delivered through planning. Primarily local water standards will be imposed through a policy requiring new homes to be built to meet a particular level of the Code for Sustainable Homes (water efficiency is a mandatory element in the Code along with energy). Less commonly local authorities may have a water specific policy – currently 12% of local authorities (as opposed to the 58% of local authorities who have a policy requiring the Code for Sustainable Homes).

135. EC Harris have updated their unit cost assessment of existing water standards and presented details in their Cost Report Section 3.5 and appendices. For example, the updated estimate of the cost over and above Part G of the Building Regulations for a 3 bedroom semi-detached house is £9 for Codes 3 and 4, and £2,697 for Codes 5 and 6. The costs are significantly less for the lower Code levels as these water efficiency levels can be delivered through making fittings more efficient, which in turn can be delivered through the use of flow restrictors to those fittings.

136. However, achieving the higher Code levels, in effect, requires a developer to incorporate some sort of water re-use. Incorporating greywater or rainwater harvesting into new developments represents a more significant cost. These costs can also vary significantly

depending on the type of dwelling with apartments costing substantially less than housing – the differences illustrating the significant efficiencies of communal systems to apartments.

137. EC Harris has estimated that the small extra over cost for Codes 3 and 4 will fall to zero over ten years as supply chains adjust. Details are contained in the Cost Report paragraph 4.5.3. This is assumed to affect both the Do Nothing and the new standard.
138. The process costs for Code Levels 5 and 6 are outlined in the EC Harris cost report Section 3.5.7 and reflect the additional design time associated with incorporating water re-use into new developments.
139. The Code take up assumptions are used to estimate the proportion of homes being built to the standard. In addition the EC Harris Survey section 4.8 shows that 12% of authorities have a water requirement. While 58% of local authorities have a Code policy and 12% currently have a water-specific policy, these will not necessarily apply to all new homes built in a local authority area. For example, a policy might only apply to development over a particular size or for social housing. The EC Harris professionals survey (Table 14 of the EC Harris Survey report) concludes that 70% of homes in plan areas will require the standard. The Adroit Economics Evidence Report analysis of the Survey (Section 9) estimates in paragraph 9.7 to avoid double counting that, due to plans a further 5% of homes in addition to Code homes will be required to meet the standard.
140. Most local water efficiency standards are currently required as a result of policies requiring new homes to meet a specific Code Level. However, areas that are commonly viewed as being "water stressed" – (namely local authorities In London, the South East and East Anglia) account for around 40% of all new homes.
141. We are currently working with the Environment Agency to establish the extent to which local water resource issues might justify a local tighter standard.
142. Adroit has also estimated the likely increase in take up of water standards in the light of the local plan trends Table 4.2 of the Adroit Evidence Report which shows that the proportion of new plans containing a water standard has increased from 8% in 2005-9 up to 25% in 2012-14.
143. Having taken these various factors into account, Adroit assume that 51% of dwellings in 2014 increasing to 66% in 2024 would be required to incorporate a water standard.

## **Option 2 – New Proposal**

144. The new water efficiency optional requirement that will be introduced into Part G of the Building Regulations is 110 litres per person per day and therefore equivalent to the current minimum standard required to meet the Code Levels 3 and 4 standard and is costed in the EC Harris Cost report in Section 4.5.
145. Those authorities who already have a Code requirement (for which water is a mandatory element) will be able to passport this through into the new water optional requirement. Similarly authorities with a specific water requirement would also be able to passport to the new standard. We have therefore assumed the same take up as for the 'Do nothing' option.

## **Process Costs**

146. It is assumed that there will be no process cost for the new Building Regulations optional requirement as the national baseline set out in Part G of the Building Regulations already

requires a water efficiency standard. The EC Harris Cost Report Section 3.5 estimates process costs for the mandatory water element of Codes 5 and 6 in Tables 27-30.

## Summary of Water Costs and Benefits.

147. The overall impact of the change has been calculated by Adroit Economics by subtracting the cost of the Do Nothing against the cost of the new standards, assuming the transition outlined above. Details are in the Adroit Evidence Report Section 9. The table below gives the net numbers for each year of the appraisal period. There is estimated to be an equivalent annual net saving to business of **£5.2m** (Low: £2.2m, High: £7.9m).

£m	Present Value	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Do Nothing Build Cost	42.5	0.9	1.1	1.7	2.5	3.6	4.8	6.4	8.3	10.5	13.2
Do Nothing Process Cost	6.3	0.5	0.6	0.6	0.6	0.7	0.8	0.8	0.9	1.0	1.1
New Proposal Build Cost	3.1	0.8	0.6	0.5	0.4	0.3	0.3	0.2	0.2	0.1	0.0
New Proposal Process Cost	0.9	0.5	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Build Cost Saving	39.4	0.1	0.5	1.2	2.2	3.2	4.6	6.2	8.2	10.4	13.2
Process Cost Saving	5.4	0.0	0.2	0.5	0.6	0.7	0.8	0.8	0.9	1.0	1.1
<b>Total saving</b>	<b>44.8</b>	<b>0.1</b>	<b>0.7</b>	<b>1.7</b>	<b>2.8</b>	<b>3.9</b>	<b>5.3</b>	<b>7.0</b>	<b>9.1</b>	<b>11.4</b>	<b>14.2</b>
Equiv. Annual Saving:	<b>5.2</b>										

## Access

148. Access standards include “Lifetime Homes Standards”, which incorporate features to meet users’ changing needs over their lifetime and wheelchair housing standards, which are designed to meet the needs of full time wheelchair users.

149. There have been a number of changes to the accessibility standard following the 2013 consultation at which the equivalent annual saving to business was estimated at £12.2m.

### Access - Do Nothing

150. The Do Nothing involves the cost of the current accessibility standards in relation to lifetime homes or comparable local standards, and the various wheelchair standards. The current trend of increasing requirements for accessibility standards over time is anticipated to continue under this assumption.

### Do Nothing – Lifetime Homes

151. Detailed analysis of the EC Harris revision of their estimates of the cost of current accessibility standards in the light of the consultation responses, and the main changes included in the new analysis, are contained in their Cost Report at Section 3.4 and the accompanying appendices.

152. The new cost estimates are outlined in Table 17 of that report. For instance, the cost estimate for building a 3 bedroom semi-detached house to lifetime homes standard is £1,097. The spatial implications of Lifetime Homes Standard have also been considered in Table 17a.

153. One important further consideration since the 2013 analysis is the estimate for BS9266 (Design of accessible and adaptable general needs housing, Code of Practice) a new British Standard which has been produced and referenced in documents as a potential future replacement for the Lifetime Homes Standard and is likely to influence future planning policies under the Do Nothing option.
154. BS9266 was drawn up by the British Standards Institute with a view to superseding the existing Lifetime Home Standard (the consultation draft for development included 'lifetime homes' in the title). An example of reference to BS9266 in a planning policy document is the "Shaping Neighbourhoods Accessible London: Achieving an Improved Environment" draft London Plan Supplementary Planning Guidance document [page 26, paragraph 2.11.5].
155. The EC Harris Cost Report in Table 17 estimates that the cost of meeting BS9266 for a 3 bedroom house will be £3,148, which is over £2,000 higher than the equivalent Lifetime Homes Standard. The introduction of this new standard would therefore become a substantial potential future cost for homebuilders under the 'Do Nothing' situation where local authorities have the power to introduce this standard.
156. A second important change in estimating the net present cost over 10 years relates to take up assumptions. At consultation it was assumed that 10% of homes outside of London and 90% in London would be built to the Lifetime Homes Standard. For this refined analysis take up estimates have been based on the EC Harris survey work for standards. There is a variation between the number of local authorities who have a lifetime home policy, and the overall proportion of homes built to lifetime homes started, as a number of authorities require that only a proportion of development is built to meet the standard.
157. The survey analysis on Access is presented in the EC Harris Survey Report in Sections 4.3 and 4.4 and the planning analysis in Section 5 especially Table 14. Drawing upon this survey the assumptions for take up are presented in the Adroit Evidence Report Section 5.
158. The Adroit report estimates that nationally 31% of new homes are currently being built to the Lifetime Homes standard and evidences the increasing trend for adopting the Lifetime Homes Standard in plans. For instance in 2005-9, it is estimated that 35% of plans adopted included the standard but this had increased to 60% by 2012-14. Based on this evidence, the report suggests an assumption that the proportion of homes built to the Lifetime Homes Standard would increase from 31% in 2015 up to 45% (from 56% of homes in plan areas) by 2024. This is consistent with past evidence of the long run trend and evidence of on-going pressures due to an ageing population.

159. In addition, after discussions the Adroit report includes an estimate of the likely take up of the new BS9266 standard. This assumes that the take up of BS9266 would be modest, despite the growing fiscal pressures from ageing, because of the substantial cost of the standard. By 2024 it is assumed that 2.4% of new homes will be built to BS9266 in addition to the 45% built to lifetime homes.
160. Based on the detail contained in the accompanying reports the overall impact of the Do Nothing is outlined in Table 15 below.

### **Do Nothing - Wheelchair standards**

161. The wheelchair housing analysis undertaken by EC Harris and presented in its report has introduced costing to reflect a range of wheelchair housing standards which have evolved beyond the original specification of the Wheelchair Housing Guide, and which are adopted by a number of authorities. The more common Wheelchair Housing Design Guide was costed in the 2013 analysis. Further details are given in the EC Harris Cost Report section 3.4. For instance, Table 17 shows that for a 3 bedroom semi-detached house the cost of building to the Wheelchair Housing Design Guide is £25,136 and to the bespoke standard is £30,428, with the full breakdown in the Appendix to the report. The spatial implications of the standard have also been considered in Table 17a.
162. Further work has also been done to recognise that a portion of dwellings are permitted to be built to standards which could be adapted for wheelchair housing rather than fully fitted out. These units are typically less expensive than a fully fitted out wheelchair housing unit. The cost a wheelchair adaptable dwelling based on the Wheelchair Housing Design Guide for the 3 bed house, from Table 17 of the Cost Report, is £10,111.
163. EC Harris provide evidence of take up of Wheelchair policies in Section 4.4 of the Survey Report. The Adroit Evidence Report Section 5 suggests that new plans are continuing to require Wheelchair standards and, given the ageing challenges outlined above it is anticipated that such requirements will increase over the appraisal period. In addition to the 17% of authorities with wheelchair standards currently in plans, the survey identified a further 9% encouraging such a standard. Typically these are requirements for a proportion (10% or less) of homes to meet wheelchair standards. The Adroit Evidence Report has therefore made an assumption, given current trends and growing pressures from an ageing population, that there will be an increase in wheelchair standards over time, from 2.3% of homes in 2014 to 3% in 2024. Based on the Survey and trends the Adroit Evidence Report assumes that 10% of wheelchair standards will be to the bespoke standard in 2015 rising to 20% by 2024.
164. Based on the detail contained in the accompanying reports the overall impact of the Do Nothing is outlined in Table 16 below.

### **Option 2 – New Proposed Category 2**

165. Under the proposed policy option the previous standards will be replaced by standards for Category 2 access and Category 3 wheelchair accessible dwellings.
166. Details for the costs of the new Category 2 standard are contained in Section 4.4 of the EC Harris Cost Report. For example Table 45 shows a £521 cost for Category 2 for the 3 bedroom house. This compares with the £1,097 cost for the Lifetime Homes Standard above. The spatial implications are presented in Table 45a.

167. For take up of the standard it is assumed that pressures for accessible housing would be the same for both the Do Nothing, where local authorities have an option to introduce Lifetime Homes into plans and for the new optional policy take up where local authorities have a comparable option to introduce the new Level 2 standard. The underlying pressures around the housing stock and an ageing population will not change. The assumption is therefore of the same increase in standards requirements over time for both the Do Nothing and option 2.

## **Option 2 - Wheelchair Category 3**

168. Details of the cost of building to Category 3 wheelchair standard are contained in 'Section 4.4' of the EC Harris Cost report and the accompanying appendices.

169. Table 45 shows that the comparable cost for a Category 3 Accessible house is £22,791 for a 3 bedroom house. This compares with £25,136 for the Wheelchair Housing Design Guide. The spatial cost implications are presented in Table 45a.

170. Overall there are significant unit cost savings in building to the new Category 3 standard compared with the Wheelchair Housing Design Guide or bespoke wheelchair guides. Again it is assumed that the underlying drivers behind demand for wheelchair housing would be the same under both the Do Nothing and the new proposal and so take up assumptions used are the same for both options.

171. The savings have been estimated below, based on the assumptions outlined above and in accompanying documents. A slight spatial cost increase, as intensive industry consultation led to a revised, higher spatial requirement in order to ensure the design was adequate, has been more than compensated overall by the build saving of the new wheelchair standard. The impact of the change is captured in Table 16 below.

## **Process Costs**

172. The EC Harris Cost Report contains details of the revised estimates for the process costs contained in Section 3.4.7 for the Do Nothing and Section 4.4.7 for the new Category 2 standard.

173. For instance the process cost of Lifetime Homes associated with a medium sized development is estimated in Table 19 at £77 per dwelling and for the new Category 2 standard in Table 47 at £48 per dwelling. For the medium development the process costs for the wheelchair standards are £725 per dwelling for the Wheelchair Housing Design Guide (Table 23), and £371 per dwelling for the new Category 3 standard (Table 52).

174. The total process cost estimate based on the same take up as the build cost above is given in the tables 15 and 16 below.

175. The equivalent annual recipient process cost savings are £5.9m for lifetime homes and comparable standards and £2.6m for wheelchair standards.

## **Summary of Access Costs and Benefits**

176. The total estimated saving from access standards over the 10 year appraisal period is summarised in the following table. It shows a total equivalent annual cost saving of **£47.8m** (Low: £28.2m, High:£83.4m), with £36.8m from lifetime homes or equivalent standards

(build saving £30.8m and process saving of £5.9m) and £11.0m from wheelchair standards (build saving £7.9m and process saving £3.1m).

**Table 15: Access – lifetime homes or equivalent, costs and savings**

£m	Present Value	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Do Nothing Build Cost	949.3	69.7	76.9	85.1	94.4	104.4	115.5	127.3	139.9	152.8	167.5
Do Nothing Process Cost	72.1	5.5	6.0	6.6	7.3	8.0	8.8	9.6	10.5	11.4	12.4
New Proposal Build Cost	683.8	68.3	69.7	64.3	66.5	72.4	78.7	85.5	92.8	100.6	108.9
New Proposal Process Cost	20.9	5.2	4.6	2.0	1.3	1.5	1.5	1.6	1.9	1.9	2.1
Build Cost Saving	265.5	1.4	7.3	20.8	27.9	32.1	36.7	41.8	47.1	52.2	58.6
Process Cost Saving	51.2	0.2	1.4	4.6	6.0	6.5	7.3	8.0	8.6	9.5	10.3
<b>Total saving</b>	<b>316.7</b>	<b>1.6</b>	<b>8.7</b>	<b>25.4</b>	<b>33.9</b>	<b>38.6</b>	<b>44.0</b>	<b>49.7</b>	<b>55.8</b>	<b>61.7</b>	<b>68.9</b>
Equiv. Annual Saving:		<b>36.8</b>									

177. The table above for lifetime homes and the table below for wheelchair standards show that the savings increase over time as more homes are anticipated to be built to accessibility standards.

**Table 16: Access – wheelchair standards, costs and savings**

£m	Present Value	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Do Nothing Build Cost	847.4	69.3	75.0	81.1	87.7	94.8	102.3	110.4	119.0	128.2	138.1
Do Nothing Process Cost	38.7	3.2	3.5	3.7	4.0	4.3	4.7	5.0	5.4	5.8	6.3
New Proposal Build Cost	779.7	69.0	73.0	75.0	79.8	86.1	92.8	99.9	107.6	115.7	124.4
New Proposal Process Cost	11.9	3.1	2.7	1.1	0.7	0.9	0.8	0.9	1.0	1.0	1.1
Build Cost Saving	67.7	0.3	2.0	6.1	7.9	8.7	9.5	10.5	11.5	12.5	13.7
Process Cost Saving	26.9	0.1	0.7	2.6	3.3	3.5	3.9	4.2	4.4	4.8	5.2
<b>Total saving</b>	<b>94.6</b>	<b>0.4</b>	<b>2.7</b>	<b>8.7</b>	<b>11.2</b>	<b>12.2</b>	<b>13.4</b>	<b>14.6</b>	<b>15.8</b>	<b>17.4</b>	<b>18.9</b>
Equiv. Annual Saving:		<b>11.0</b>									

## Space

178. Significant further analysis has been undertaken to evidence the impact of space standards following the 2013 Consultation where a preliminary cost analysis was undertaken but was not included in the summary estimate.

179. The space standard policy has been revised to propose a single new space standard for different dwellings and EC Harris has undertaken a review of the costs of the new proposed standard.

180. Further work has involved a more detailed assessment of the impact of a space standard across the distribution of dwelling sizes using data from the English Housing Survey.



181. More detailed consideration has been given by EC Harris to the additional market value of a new house which is a direct consequence of being built to a higher space standard and is outlined below.

## **Do nothing**

182. This assumes that the current space standards which are applied will continue to be taken up at the same pace as in recent years.

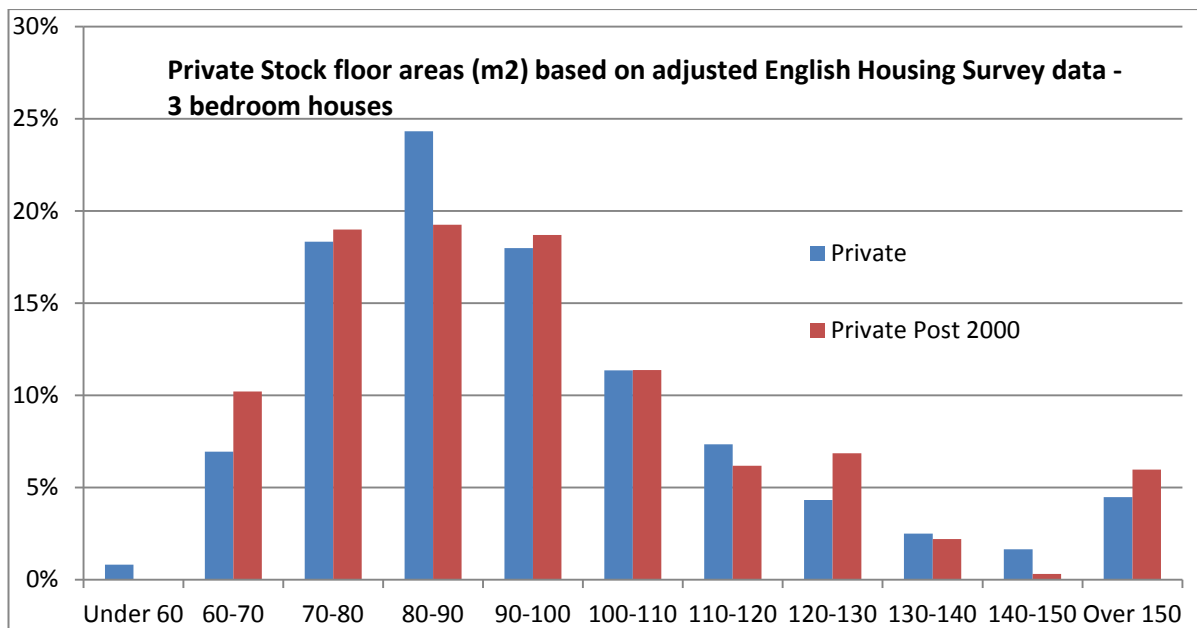
183. The floor area requirements for the London Supplementary Planning Guide are given in Table 12 of the EC Harris Cost Report. Following the consultation EC Harris have undertaken a detailed update of unit costs for the existing standards which is summarised in Table 12a of the Cost Report. For instance a 3 bedroom semi-detached house built to the London Housing Supplementary Planning Guide will cost an estimated £2,528 above the typical private average.

184. Following the lead of the London Housing Design Guide, and subsequent inclusion of cross tenure space standards in London in 2010, a significant number of local authorities including those outside London have introduced requirements for cross tenure space standards in to their own plans. These cross-tenure policies have typically adopted the same or larger spatial requirements as those adopted in the London Plan.

185. However there is likely to be a degree of variation in how a standard is checked and with respect to the number of properties built in areas requiring construction to a given size. Given that most adopt the same or slightly greater internal area requirements as those in the London Plan, and the uncertainty in enforcement approach, it is proportionate for this analysis to assume that the London standard is the current requirement where plans specify a space standard.

186. At consultation a simple average size increase was estimated in order to cost each increase in space area. For this analysis we have used data from the English Housing Survey to evidence house sizes in recent housing. The Survey data are weighted to ensure they reflect the housing stock as a whole and the year of build is identified for each year in the sample. From this data, Adroit have produced distribution charts of dwelling size for the different categories, which are presented in Section 7 of their Evidence report.

187. The following Chart presents the distribution for 3 bed houses for all private housing in the stock (blue bars) and for post -2000 housing (red bars) which captures the most recent build in the English Housing Survey.



188. Using this data it has been possible to estimate the extra over cost of a particular space standard relative to a baseline distribution which reflects private build housing. Further detail can be found in the Adroit Economics Evidence Report Section 7.

189. The EC Harris Survey of planning policy has identified (in Table 10) that 33% of all local authorities contain a space standard in plans, although 10% of these are for local authorities only. The 'Professionals survey' evidences in Table 14 that, within these areas, the standard is required for an estimated 82% of new build after negotiation. From this analysis, the Adroit Evidence Report (Para 7.13-7.14) concludes, when the space standard in London is taken into account, that 7% of private homes outside of London are currently subject to a minimum space standard. This has been used to provide an analysis of take up of current space standards across England to estimate the total impact of the space standard over and against the market led baseline as evidenced by the English Housing Survey.

190. The table on introduction of plans over time in Table 4.2 of the Adroit Evidence Report shows that the take up of space standards has increased over time with 50% of plans introduced over the most recent period containing space standards. Based on this trend evidence, Adroit Economics has estimated an increase in take up over the appraisal period in Section 7 that the proportion of new private homes built to space standards outside of London will increase from 7% in 2014 to 14% in 2024. It is assumed that 100% of all new homes in London and affordable homes across England will continue to be built to sizes comparable to existing space standards.

191. More detail can be found in Section 7 of the Adroit Evidence Report.

## Do nothing – Space Affordable Housing

192. Information supplied by the Homes and Communities Agency has enabled Adroit to model a typical build distribution for social housing under the current grant funding system, known as Housing Quality Indicators. With regard to affordable housing costs the "do nothing" \*(option 1) assumes that the current Housing Quality Indicators will continue into the future. The system is such that it ensures a minimum size of dwelling, known as the 'Housing Quality Indicators Minimum' but also provides incentives so that a reasonably high

proportion of homes are built above this minimum standard, some significantly higher. Further detail can be found in the Adroit Economics Evidence Report section 7.

## **Do Nothing – Space Process Cost**

193. Per dwelling process costs for private dwellings have been estimated by EC Harris taking into account the additional effort involved in designing to meet the current range of space standards. Designing dwellings to meet a space standard can often involve significant change to a standard design which is disproportionality greater than technical standards e.g. for thermal performance of a roof or wall, or for security standards for doors and windows. Even small variations in requirements such as internal storage can require extensive change to other aspects of a dwelling plan to comply.
194. Even where the basic spatial requirements of a space standard are very similar, extensive checking is necessary where local authorities have their own standard because these are often described in subtly different ways and liability rests with the designer in ensuring that properties comply. Some of the issues involved include:
- significantly increased risk and uncertainty as to detailed compliance where standards vary.
  - day-lighting calculations which are needed per dwelling and are in excess of what would be undertaken for other purposes
  - an element of subjectivity which feedback suggests impacts on compliance often causing multiple design iterations.
195. The total process time for meeting the London Supplementary Planning Guide for a medium 50 dwelling development has been estimated at 30 hours, with an estimated cost of £31 per dwelling. More detail is presented including of hours and costs for different sizes of development, in the EC Harris Cost Report Section 3.3.

## **New Proposal – Option 2**

196. The new optional proposed space standard is detailed in the “Nationally Described Space Standards – Technical requirements” document. The minimum floor area requirements on which the EC Harris costings are based are outlined in the table below.

**Table 17: Minimum internal Gross Internal Areas and Storage**

number of bedrooms	number of bedspaces	1 storey dwellings	2 storey dwellings	3 storey dwellings	built-in storage
studio	1p	39 (37)*			1.0
1b	2p	50	58		1.5
2b	3p	61	70		2.0
	4p	70	79		
3b	4p	74	84	90	2.5
	5p	86	93	99	
	6p	95	102	108	
4b	5p	90	97	103	3.0
	6p	99	106	112	
	7p	108	115	121	
	8p	117	124	130	
5b	6p	103	110	116	3.5
	7p	112	119	125	
	8p	121	128	134	
6b	7p	116	123	129	4.0
	8p	125	132	138	

197. The space standard will remain an option for a local authority to introduce as part of its plan as it is now. It is therefore assumed that the take up of space standards would continue to be driven by the same local issues and priorities in both options and that the trend increase in the proportion of plans identified above would be the same for the proposed option 2 as for the Do Nothing.

198. For private housing the extra over cost of delivering the new standard against the baseline in the English Housing Survey distribution has been estimated and this has then been compared with the cost of the current space standards to give a saving. The saving is primarily derived from the differences in minimum Gross Internal Area for houses proposed in the single tier space standard compared with current space standards, and from the reduction in process costs in demonstrating compliance.

**Table 18: Minimum gross internal floor areas and storage**

m2	Current London standard	New standard
1 Bed flat (1storey)	50	50
2 Bed Flat (1 storey)	61	61
2 bedroom House (2 storey)	74	70
3 bedroom house (2 storey)	87	84
4 bedroom house (2 storey)	100	97

### **New Proposal Option 2 – Affordable Housing**

199. The standards included within the consultation accompanying this Impact Assessment are intended to be applicable across all tenures. Requirements for Grant Funded housing as part of the Affordable Housing Programme to meet a range of bespoke standards will no longer apply to future programmes. This includes removing requirements to meet minimum space standards, and incentives to build to larger size ranges within the Homes and Communities Agencies Housing Quality Indicators. Grant applications for the 2015-18 Affordable Housing Programme have been benchmarked against the Level 1 space standards from the 2013 consultation. Given that incentives to build to larger size ranges

have been removed with the replacement of Housing Quality Indicators, a higher proportion of homes will be built to sizes closer to the new benchmark, with a reduction especially in homes built to a much higher level than the Housing Quality Indicators Minimum range. Adroit Economics have considered the approach and estimated a reduction of the proportion of homes built significantly above the benchmark. Details are outlined in the Adroit Evidence Report Section 7.

200. It is also the case that the trend amongst Local Authorities of adopting cross tenure space standards will impact equally on affordable housing. The proposed space standard with a slightly lower range of minima for house types will therefore create savings for affordable housing provision where requirements for a cross tenure space standard apply, and which in the do nothing scenario would need to be bigger. Because cost recovery is not possible in affordable or social rent, these savings are potentially significant.

### **New Proposal – Process Savings**

201. The new system will involve significantly lower process costs for private dwellings than the current London Supplementary Planning Guidance, including giving home builders the opportunity to approve design-types which can then be built across England. This is primarily because a national methodology for space standards enables type approvals of standard designs to be used anywhere in England, reducing the need for re-design and re-checking in each individual local authority area where a space standard applies. This is particularly relevant to volume developers working nationally. For smaller builders and developers, a single national methodology will enable the market to produce viable pattern book compliant designs which can be cost effectively adopted where more extensive design team resources are not available. These are well recognised benefits where standardisation is applied to industry practice.

202. Details of the costs are in the EC Harris Cost report Section 4.3, for instance a medium development process costs £8 per dwelling with a recipient process cost of £2 per dwelling. Further detail on how these unit cost estimates are used to estimate the overall impact can be found in the Adroit Evidence Report Section 7. No process savings are assumed for affordable housing.

### **Summary of Total Cost Savings**

203. To estimate the cost impact of additional space in a new home, EC Harris have estimated the build cost impact and then considered the likely increase in the private sale value of the home. Their approach is explained in detail in Section 4.2 on pages 43-44 of their report. The Adroit Economics Evidence Report paragraphs 7.25-7.26, explains the basis for the assumption that an average increase of around 3 m<sup>2</sup> due to differences in standards results in an estimated 80% cost recovery, based on Table 7.13 of their report.

204. The overall savings as a result of the change in space standards for those homes affected have been calculated by Adroit Economics based on the assumptions outlined above. The present value saving from the change in build standards is £25.5m and from the process savings is £11.7m. This results in a total equivalent annual saving of **£4.3m**.

£m	Present Value	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
<b>Net build cost savings</b>	25.5	0.1	0.8	2.4	3.1	.3	.6	3.9	4.2	4.6	4.9
<b>Net process cost savings</b>	11.7	0.1	0.3	1.2	1.5	1.2	1.8	1.9	1.7	2.2	2.4
<b>Total</b>	37.2	0.2	1.0	.6	4.6	.6	5.4	5.8	5.9	6.8	7.3
Equivalent Annual:		<b>4.3</b>									

205. The equivalent saving from the Affordable Housing change is **£9.5m** (see table 20 below). This gives a total equivalent annual saving to business from lower space standards of £13.8m (Low: £8.1, High: £21.2m).

£m	Present Value	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
<b>net build cost savings</b>	<b>81.7</b>	0.1	0.9	4.0	6.6	8.7	10.9	13.4	16.1	19.0	22.2
Equivalent Annual:		<b>9.5</b>									

## Security

206. There have been a number of changes to the Security proposal following the 2013 consultation when the Estimated Annual Net Benefit to Business was estimated as £1.6m.

### Security - Do Nothing

207. Under the Do Nothing option, in the absence of the proposed changes, the Secured by Design Section 2 requirements would continue to be required for affordable housing, as a method for gaining voluntary points in the Code for Sustainable Homes and through an increasing number of local plans, with developers facing the risk that this standard could change in future with less transparency and consultation.

208. At the consultation 79% of respondents disagreed with the costs estimated in the 2013 analysis and of those that disagreed and commented, a large number felt that costs had been overestimated. Some suggested this overestimation was because the Impact Assessment did not take into account the increased number of security products being produced to Secured by Design standards which has resulted in lower costs. A few however felt that the costs were underestimated.

209. EC Harris has undertaken further costings in the light of these comments and subsequent discussions with interested industry parties and the detailed cost results for Secured by Design are presented in its Cost Report Section 3.1. The cost of building a 3 bedroom semi-detached house to the Secured by Design standard for a large developer is estimated at £299. This is significantly less than in the previous analysis which reflects the consultation responses and information supplied that the cost of building to higher security standards has fallen substantially since its introduction.

210. More detailed work has been done by Adroit Economics to estimate the proportion of homes being built to the Secured by Design standard, based upon consultation responses and the EC Harris Survey. The results are in the Adroit Evidence report Section 6. The Survey revealed that 17% of new homes are built in areas with a plan requirement for Secured by Design. The Professionals Survey in table 14 of the Survey Report suggests that 74% of homes in these areas or 12.9% of all new private homes will be built to these standards as a result of planning policy. We have assumed that 100% of affordable homes will be built to the standard as it is a HCA funding requirement.
211. The EC Harris analysis for the Code suggests that the cost of Secured by Design credits relative to obtaining alternative voluntary credits is relatively expensive and it would only be likely to be applied to achieve Code levels 5 and 6. However, evidence at consultation has indicated that a significant portion of Code 3 and 4 homes include Secured by Design. It is common for local authorities and local police forces to encourage construction to this higher security standard and there is evidence that this results in a fairly high portion of Code homes being built to this standard. Based on this evidence we have estimated that currently 9.6% of all new homes are built to secured by design standards as part of the Code where it would not already be a plan requirement. This is an indication of local efforts around the need for security in new homes.
212. The EC Harris Survey Report Table 1 shows that while only 21% of local authorities currently include a firm policy (accounting for 17% of new homes) there are a total of 44% of local authorities which include a firm or 'aspirational' standard. In addition the Adroit Evidence Report table in Section 4.13 shows an increase in the proportion of new plans containing the requirement, apart from the most recent period where there is a slight drop, though with a small sample size. In general, together with evidence of aspiration policy in plans, the evidence suggests that the trend is clearly for more new homes to be built to a higher security standard. Based on this evidence Figure 5.3 of the Adroit Evidence report estimates that the proportion of dwellings in a plan area with Secured by Design will increase from an estimated 17% at the start of the appraisal period to 36% in 2024. This is still below the 44% aspirational figure mentioned above. Further, the proportion of private Code homes requiring security will increase from 9.6% at the start of the appraisal period to 13.6% by 2024.
213. The Do Nothing assumes that Secured by Design remains a Homes and Communities Agency funding requirement for affordable homes. The overall assumption is 39% of all homes (private and affordable) are currently built to Secured by Design which will increase to 52% by 2024.
214. This is consistent with information supplied during the consultation where a number of consultees were of the view that the 2013 Impact Assessment underestimated the proportion of homes currently being built to Secured by Design standards. For instance the previous consultation Impact Assessment was based on information about certificates whereas in the case of planning or the Code a significant number of homes are built to Secured by Design standards but do not receive a certificate.

## Security – Option 2 Introducing a new security requirement into building regulations

215. Option 2 introduces a simplified and streamlined mandatory security requirement for all new homes. The new guidance supporting this requirement focuses only on the provision of doors and windows meeting Publicly Available Specification 24. Whilst this does not replicate the full range of requirements included in the Secured By Design standard, it is widely acknowledged amongst security experts that properly specified doors and windows contribute the lion share of burglary reduction which makes this approach highly cost effective. EC Harris have undertaken detailed new costing for this new requirement in the light of consultation responses and discussions with a range of industry parties. The results are outlined in Section 4.1 of the EC Harris Cost Report. The cost of building a 3 bedroom semi-detached house to the Part Q requirement for a large developer is estimated at £79.

216. The process of checking compliance will be carried out by building control who are already responsible for checking the home for various parts of the building regulations. This means that the process costs will be less than those associated with Secured By Design. An estimate by EC Harris of these costs has been made in their Cost Report in section 3.1 for the Do Nothing and 4.1 for the Part Q cost. For instance, for a medium sized development the estimated process cost of £16 for a Secured by Design house is expected to reduce to £0.4.

### Impact of New Standard over the Do Nothing.

217. The overall impact of the policy change depends on the costs of the new standard relative to the Do Nothing and on estimates of uptake for both the Do Nothing and New standard. Whilst the Government is minded to apply the requirement to all new homes, take up has been assessed for applying the requirements both as a mandatory requirement for all new homes ('Part Q All' in Table 21 below) and locally as an optional requirement ('optional' rows in Table 21 below) where the take up for the new standard has been assumed to be the same as the Do Nothing. Only the mandatory approach contained in the shaded rows in Table 21 is estimated in the Summary tables at the front of this Impact Assessment.

£m	Present Value	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
<b>Build Cost</b>											
<b>Do Nothing</b>	<b>194.2</b>	<b>15.5</b>	<b>16.9</b>	<b>18.4</b>	<b>20.0</b>	<b>21.7</b>	<b>23.5</b>	<b>25.4</b>	<b>27.5</b>	<b>29.7</b>	<b>32.1</b>
optional	67.0	14.9	13.0	6.4	4.6	5.0	5.4	5.9	6.4	6.9	7.4
Saving Optional	127.3	0.6	3.9	12.1	15.4	16.7	18.1	19.6	21.2	22.9	24.7
<b>Part Q All</b>	<b>111.1</b>	<b>15.2</b>	<b>14.8</b>	<b>11.5</b>	<b>10.7</b>	<b>11.3</b>	<b>11.8</b>	<b>12.4</b>	<b>13.1</b>	<b>13.7</b>	<b>14.4</b>
<b>Saving All</b>	<b>83.1</b>	<b>0.3</b>	<b>2.2</b>	<b>7.0</b>	<b>9.2</b>	<b>10.4</b>	<b>11.6</b>	<b>13.0</b>	<b>14.4</b>	<b>16.0</b>	<b>17.7</b>
<b>Process Cost</b>											
<b>Do Nothing</b>	<b>29.6</b>	<b>2.4</b>	<b>2.6</b>	<b>2.8</b>	<b>3.0</b>	<b>3.3</b>	<b>3.6</b>	<b>3.9</b>	<b>4.2</b>	<b>4.5</b>	<b>4.9</b>
Optional	5.6	2.3	1.9	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Saving optional	24.7	0.1	0.8	2.3	3.0	3.2	3.5	3.8	4.1	4.4	4.8
<b>Part Q All</b>	<b>5.6</b>	<b>2.3</b>	<b>1.9</b>	<b>0.5</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>
<b>Saving All</b>	<b>24.0</b>	<b>0.1</b>	<b>0.7</b>	<b>2.3</b>	<b>2.9</b>	<b>3.1</b>	<b>3.4</b>	<b>3.7</b>	<b>4.0</b>	<b>4.3</b>	<b>4.7</b>



218. The transition assumptions are similar to those used elsewhere in this impact assessment and are outlined in the table below.

	2015	2016	2017	2018	2019 onwards
Current standard	38%	29%	6%	0%	0%
New standard	5%	30%	85%	100%	100%

219. While the saving to homebuilders from applying the requirement to all new homes will be less than for applying it to only a proportion of new housing through a targeted and locally applied approach, it is still assumed that there will be an overall saving as the cost of building a house to Secured by Design is over three times higher than the cost of building to the new standard. So the total current cost of building to Secured by Design for up to 52% of new homes by 2024 under the Do Nothing will be higher than the cost of building 100% of homes to the new standard over the same period.

220. The change produces an equivalent annual saving to business of £12.5m as broken down in the table below. Although this is clearly an overall saving to business it is nonetheless a regulatory approach albeit an approach that this also delivers a significant degree of simplification. This saving is therefore treated in this Impact Assessment as a zero net IN.

<b>Build Cost</b>	
Present Value Saving	83.1
Annual Equivalent Saving	9.7
<b>Process Cost</b>	
Present Value Saving	24.0
Annual Equivalent Saving	2.8
<b>Total annual equivalent saving to business</b>	<b>12.5</b>

Details on the social benefits of security standards are outlined in the Social Impacts section below.

## **General Process Costs**

221. EC Harris have estimated the cost house builders incur as a result of needing to employ staff to ensure new homes comply with the wide range of standards local authorities can require. These wider process costs are a separate element from the direct process costs which relate primarily to design and evaluation and which have been quantified for each individual standard previously. A consultation equivalent annual estimate of £17.7m was calculated for the 2013 Consultation impact assessment.

222. Costs were estimated based on extensive discussions between EC Harris and a steering group of partners representing a wide range of interests including house builders, local authorities and owners of housing standards. EC Harris also undertook a small scale consultation to understand the potential overhead process costs for a typical firm. It was this industry discussion which emphasised the importance of these wider process costs.

## **Option 1 - Do Nothing**

223. The general process cost estimate seeks to capture the process costs companies face where in-house experts or consultants are employed on a more general basis. An example is a developer employing a “compliance” expert with a remit to ensure each site team comply with the various Code for Sustainable Homes and separate but related requirements to ensure there are no costly problems at completion. These are in addition to the process costs associated with a particular standard which have been costed above.
224. Employing a compliance expert to manage risks associated with compliance and to identify the most cost effective approach to doing so is critical to home builders and developers because the value of their development is at risk unless planning conditions or requirements of the planning permission are properly discharged. Developers will not be able to pass a conveyancing test to sell a property unless records demonstrate these requirements have been met.
225. Ensuring compliance is complicated by local and regional variations in the standards required, varying interpretation of technical requirements, the unpredictable cycle of updating or changing standards, and marrying this to individual developers’ supply chain and construction management practice. This creates a substantial Quality Assurance role within home builders business models, and in particular places a significant and disproportionate strain on small home building business’ to manage compliance.
226. EC Harris and Adroit Economics have undertaken further estimates of general process costs in the light of consultation responses and further discussion. Their work is presented in the EC Harris Cost Report Section 5.2 and in the Adroit Evidence Report Section 12.
227. Further discussions have concluded that even micro sized firms with fewer than 4 employees will experience a significant degree of hassle, time and cost becoming familiar with local standards associated with planning permission for their homes, even though they may not have dedicated capacity to deal with them. EC Harris have adjusted their previous analysis and have estimated an annual £1,287 cost per firm for firms with 1-4 employees. The EC Harris Cost Report Table 62 gives the detailed cost industry estimates for different sized firms.
228. The Adroit Report has drawn on Office for National Statistics construction data to estimate the number of homebuilders in England broken down by firm size. They have then estimated the costs of the current Do Nothing in a table in Section 12.

## **Option 2 – New Proposal**

229. EC Harris have estimated the general process time which would be incurred by firms meeting the new streamlined standards, which will involve more integration with building control bodies who are already carrying out checks on the new development. For instance a micro-business with 1-4 employees it is estimated that general process costs associated with meeting the new standards involve an on-going cost of £858 per annum. This represents a reduction of £429 per firm or a total annual saving of £3.7m over the Do Nothing according to the table in Section 12 of the Adroit Evidence Report.

## Summary of General Process Cost Savings to Business.

230. Based on this estimate Adroit have calculated the present value cost to business of the Do Nothing over the 10 year appraisal period of £640.1m and of the New Proposal of £452.6m. This results in a present value saving to business of £187.5m or an equivalent annual saving of £21.8m (Low: £17.4m, High: £26.1m).

£m	Present Value	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
<b>Do Nothing</b>	<b>640.1</b>	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4
<b>New Proposal</b>	<b>452.6</b>	74.4	68.5	53.8	50.8	44.9	44.9	44.9	44.9	44.9	44.9
<b>Saving</b>	<b>187.5</b>	0.0	5.9	20.6	23.5	29.4	29.4	29.4	29.4	29.4	29.4

**Equivalent Annual Saving: 21.8**

## Supply Chain Process Savings

231. There will be an additional benefit to developers where the simplification and standardisation in build processes could result in significant efficiency savings in supply chains. Even a small improvement in supply chain processes as a direct result of simplification of standards could achieve a potentially substantial saving.

232. A specific question on supply chains was asked in the 2013 consultation and 77% of respondents agreed that a nationally consistent set of standards could achieve supply chain savings.

233. Some of the suggested benefits included increased certainty, optimised innovation, economies of scale, a level playing field and a reduction in design consultancy fees. No estimates or evidence were provided to support these assertions. Some respondents suggested that the large homebuilders would gain the most. There were some concerns about the potential impact on sustainability and suggestions from some homebuilders that there should be no additional tiers for local application.

234. Among the 23% who disagreed with the proposition, some respondents felt that the existing Code for Sustainable Homes was sufficient as it was already widely recognised and understood by the industry and was delivering supply chain efficiencies. At consultation it was estimated that a 0.1% saving in supply chain costs could result in an annual saving of £16m (2013 prices) based on Office for National Statistics construction statistics. However it was treated as a non-monetised benefit due to insufficient evidence.

235. The consultation did not provide sufficient evidence to change this situation and it is still treated as a non-monetised benefit. Further discussion has suggested that simplification of standards is more likely to achieve a benefit saving to business where the changes are combined with other modifications to optimise supply chains, such as a trend to modern offsite methods of construction. In this case supply chain savings may be more appropriately considered an 'indirect' benefit of these changes to the Housing Standards Review, albeit a potentially significant benefit.

## Transition Costs

236. The 2013 consultation estimated the one off cost of introducing the new standards set through looking at the familiarisation time and training cost for homebuilders.
237. This work has developed further to estimate the cost for professionals to become familiar with the new standards in addition to homebuilder time. Unlike in the 2013 consultation analysis it is now assumed that professionals will access documents electronically and so there will be no cost incurred from obtaining new standards.
238. It is estimated that construction firms directly involved in homebuilding will incur a £0.4m cost, professionals involved in home building, such as architects will incur £11.0m costs and professional firms will incur an additional £4.8m cost.
239. Further details of the analysis and underlying estimates can be found in the EC Harris Cost Report in Section 5.1 and in the Adroit Evidence Report Section 13.
240. Adroit Economics has discussed and considered the process by which transition costs are incurred and concluded that the transition will be spread over 3 years with 70% in year 1, 30% in year 2 and the remaining 10% in year 3.
241. The total present value cost over 3 years is £16m. Converted to equivalent annual cost over the appraisal period to provide an annual estimate consistent with the rest of the analysis gives an EANCB of **£1.9m** (Low: £1.5m, High: £2.2m).

**Table 25:**

£m		Transition Costs		
Equiv Annual	Present Value	2015	2016	2017
<b>1.9</b>	<b>16.0</b>	<b>11.3</b>	<b>3.2</b>	<b>1.6</b>

## Summary Table

242. The following table provides a summary of the costs and benefits for the various standards evidenced above. This is a consultation stage impact assessment. A validation impact assessment will be sent to the RPC in due course to confirm One In Tow Out status and validate the equivalent annual net benefit to business.

**Table 26: Option 2**

243. This assumes that existing standards are withdrawn and replaced by optional standards in the specific areas identified with the exception of Security for which the new standard becomes mandatory for all new homes. This is counted as a 'zero net IN' below.

	<b>Low</b>	<b>Central</b>	<b>High</b>
Code - Energy	£11.8m	£23.9m	£55.4m
Code – other credits	£12.3m	£17.4m	£25.8m
Water	£2.2m	£5.2m	£7.9m
Access	£28.2m	£47.8m	£83.4m
Security <sup>1</sup>	-	-	-
Space	£8.1m	£13.8m	£21.2m
General Process	£17.4m	£21.8m	£26.1m
Transition Costs	-£1.5m	-£1.9m	-£2.2m
<b>Total</b>	<b>£78.6m</b>	<b>£128.0m</b>	<b>£217.5m</b>
<b>2009 prices:</b>	<b>£70.2m</b>	<b>£114.3m</b>	<b>£194.3m</b>

<sup>1</sup> The Option 2 for Security estimates a £12.5m saving to business but is considered a 'zero net IN' for One In Two Out purposes.

## Monetised and non-monetised social benefits of each option

### Energy

244. The energy proposal is designed to ensure a smooth transition to the zero carbon build standard whilst constraining tighter and more expensive requirements contained in the Code for Sustainable Homes.
245. This will ensure that significant energy and carbon savings in new homes will be achieved over the appraisal period because of policies driven by the building regulations. However, the more costly Code 5 and 6 levels which are anticipated in plans to be introduced during this period will now be excluded and this means that some energy and carbon savings will be foregone.
246. An exploratory initial assessment of the cost effectiveness of the abatement was undertaken for Code Level 5 homes dwelling emission rate (ENE1) requirement.
247. The extra over cost of £17,764 for a detached house is estimated to save around 1.7 tonnes annually in achieving Code Level 5. The energy and carbon savings vary according to the traded and non-traded carbon mix of the abatement and have been estimated using the Supplementary Green Book Guidance for energy and carbon prices. Where traded carbon is being saved – for instance through solar photovoltaics - the value to society of the energy savings are higher but the value of carbon savings per tonne is much lower in the guidance, whereas for non-traded savings - for instance through tighter fabric or a heat pump – the value to society of the energy savings is much lower but the carbon value is higher. So the overall impact in energy plus carbon savings is similar for both at around £350 per annum.
248. The length of time this benefit would be realised depends on the technology, with fabric standards achieving savings over a long period, say 60 years, while renewables technology might last more typically 30 years. If it is assumed the savings would occur over 45 years on average without maintenance or replacement costs, a simple cost-benefit calculation shows a significant negative net present value for Code 5, even when the carbon emissions are

valued. The cost effectiveness of Co<sub>2</sub> abatement is around **£120-£150 per tonne** depending on the traded/ non-traded mix.

249. Clearly this cost per tonne will fall over time due to learning effects outlined above. However, the analysis illustrates that, while some energy and carbon savings are being foregone, the abatement is relatively expensive over the appraisal period. The zero carbon building regulations policy, involving offsite allowable solutions beyond Code Level 4 carbon compliance level will represent a significantly more cost effective approach to abating carbon.

## **Water**

250. Reduced water consumption has a number of wider benefits.

251. First, more efficient water fittings will mean that, on average, the householder will use less water (even if their behaviour remains the same). As all new homes have a water meter, the total amount householders pay for their water, relates directly to their water use. Therefore a home built to the optional requirement water standard would use 15 litres per person per day less than one built to the national baseline in the Building Regulations.

252. Around a half of all water used is hot water and therefore more efficient showers and taps and smaller baths will also deliver lower energy bills as less water would need to be heated. It is estimated that for a family of four water and energy savings would equate to approximately £100 per year.

253. Second, water companies will lose revenue from householders but will benefit from reduced operational expenditure and also from deferred capital expenditure (associated with capacity to supply and treat water). These will vary both between companies and between water resource zones within that company's area. There is more detailed analysis of the "average incremental cost of water" in the analysis supporting the introduction of the baseline water efficiency standard into Part G of the Building Regulations (see link below). It should be noted that that this shows that the Average Incremental Cost is higher in areas of water stress, which is where the tighter standards are intended to be targeted.

254. Finally, as lower water consumption is associated with lower energy use (both by the consumer and the supplier) there is also a consequent carbon saving associated with reduced water use.

255. The Impact Assessment that includes this analysis is available at:  
[http://www.legislation.gov.uk/ukxi/2009/1219/pdfs/ukxiem\\_20091219\\_en.pdf](http://www.legislation.gov.uk/ukxi/2009/1219/pdfs/ukxiem_20091219_en.pdf)

256. While this analysis seeks to monetise the benefits set out above, it also highlights a number of other non-monetised benefits – not least in terms of habitat and biodiversity, land loss and the visual impact on the landscape.

## **Social Costs**

257. As stated above, as all new homes are metered, reduced water consumption results in reduced water bills for consumers. Conversely there is therefore a corresponding loss of revenue for water companies, though this is offset by reduced expenditure.

## Social benefits of Access standards

258. Accessible housing standards, including general needs housing such as the Lifetime Home standard and the Wheelchair Housing Design guide, have emerged in response to a range of different needs and drivers. These include, but are not limited to;

- Designing out barriers to independent living
- Improving the range of housing choice for disabled people
- Supporting mobility for disabled people in finding employment
- Mitigating cost to social welfare and health system arising from an ageing population

259. Often these drivers for change overlap, and sometime where different issues are addressed share a common solution. The Lifetime Home standards in particular is considered to encapsulate an 'inclusive' approach to housing design, where a range of features are required which deliver broad benefits to a range of users. There are a number of key considerations for the government.

## Impact of an ageing population

260. Office for Budget Responsibility analysis has estimated that primarily due to an ageing population, without corrective action, government net debt will increase over an extended period to reach 99% of Gross Domestic Product by 2062/63 and rising. ["Ageing Population to put pressure on public finances" Fiscal Sustainability Report 2013].

261. Non-interest spending could increase by 4% of Gross Domestic Product or £60bn by 2062/63, due to age-related spending pressures including health and long-term social care costs. The Office for Budget Responsibility analysis estimates that health spending will increase from 7.0% of Gross Domestic Product in 2017/18 to 8.8% in 2062/63 and long-term social care costs will increase from 1.3% of Gross Domestic Product in 2017/18 to 2.4% of Gross Domestic Product in 2062/63.

262. There is also a direct correlation between age and disability, with older people more likely to have mobility problems and so benefit from any features of their home that make it more accessible both inside and outside. The number of over 65s is forecast to increase from 10 million to 15.5 million in 20 years' time with the number nearly doubling by 2050 to 19 million.

263. The number of very old will grow faster; currently there are 3 million people aged over 80 and this is projected to double to 6 million by 2030 and 8 million by 2050. Currently 1 in 6 of the United Kingdom population is aged 65 and over, by 2050 1 in 4 people will be aged 65 and over. There are now more people in the United Kingdom aged 60 and above than there are under 18 and more pensioners than there are children under 16<sup>11</sup>

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<sup>11</sup> [http://www.ageuk.org.uk/Documents/EN-GB/Factsheets/Later\\_Life\\_UK\\_factsheet.pdf?dtrk=true](http://www.ageuk.org.uk/Documents/EN-GB/Factsheets/Later_Life_UK_factsheet.pdf?dtrk=true)

## **Meeting the housing need of disabled people**

264. There are an estimated 10 million disabled people in the United Kingdom, including estimates of between 605-720,000 wheelchair users. There is a historic shortfall in the availability of properties across tenure that are capable of meeting the needs of younger, working age people with impaired mobility or who are wheelchair users. This impacts on the ability to live independently and can reduce mobility in terms of moving to take up employment.
265. Local Authorities typically intervene to correct this failure in order to ensure that new neighbourhoods will meet these needs in the longer term and also to provide a 'downsizing' offer for older households. This helps address under occupancy of larger family homes, and reduce direct costs to the state, because accessible housing can support elderly and disabled people living independently in their homes which reduces, or delays, the need for expensive social care or the need for them to move into a care home at a significant cost.

## **Difficulties in adapting existing housing**

266. Local Authorities also experience difficulties in matching needs to appropriate housing in the existing stock, and a growing number of homes fail to meet the accessibility needs of the older population. This is exacerbated by difficulty in adapting the existing stock to meet older and disabled people's needs.

## **Social Benefits**

267. There are a range of social benefits which can arise from building more accessible housing. Typically, these are greater where a household includes an older, disabled or vulnerable person. The most common savings include but are not limited to;
- Avoiding temporary residential costs by enabling early return from hospital
  - Reduced bed blocking in primary health care due to inappropriate housing preventing return home
  - Reduced residential care costs by delaying long term need to move in to residential accommodation
  - Reduced cost of and need for care assistance in the home
  - Reduced costs to the health service arising from unsuitable housing and including trips, falls and injury to carers
  - Reduced cost or need for adaptations
  - Reduced cost of removing adaptations
  - Reduced administration costs in re-housing older or disabled people



## **Avoiding temporary residential costs by enabling early return from hospital**

268. Prior to discharge it is typical practice for occupational therapists to assess conditions in the home to establish if older, disabled or temporarily injured people will be able to cope; to arrange for care and support where this will be necessary or recommend delayed return (until suitable adaptations can be made) or arrange a temporary move in to residential care. Accessible housing improves speed of adaptation and makes it easier to avoid the need for temporary re-housing in residential accommodation.
269. The critical activities that in particular older or disabled people need to be able to undertake are to move safely around the property (including up and down stairs); to wash and access a toilet; and to prepare food. Typically this means having eating, sleeping and washing accommodation at ground level, and the capacity to speedily fit critical adaptations such as grab rails in bathrooms. The cost of a ten day stay in residential accommodation is £767.

## **Reduced bed blocking due to inappropriate housing**

270. In addition to the costs of residential care arising from homes being unsuitable for patients to return to are the costs to the NHS where bed blocking occurs (as an alternative to residential care). This is a separate and more common cost. On any given day, 65% of hospital beds are occupied by the over 65's (Department for Health). The cost of an NHS bed is around £260 per day or £94,900 per year.
271. A significant number of bed days are lost each year as a result of bed blocking by older people unable to return home. Whilst it is likely that housing which is more accessible or adaptable will reduce the frequency of bed blocking, improved evidence of the frequency with which this happens is needed to monetise this benefit.

## **Reduced residential care costs by delaying long term need to move in to residential accommodation**

272. Aside from specific incidents, injuries and ill health, the accessibility and adaptability of housing also affects the 'tipping' point at which individuals are moved into full time residential care – this has a typical cost per year of £28,800. Often, a move into care is precipitated because of the unsuitability of an existing home and the difficulty of adapting the property or lack of funds to adapt the property in a timely manner. This will particularly be the case where people have severely impaired mobility.
273. In particular, the availability of fully wheelchair accessible or adaptable housing can provide an alternative to residential care, and enable families to continue to live together and support each other, as well as delivering considerable savings to health and social welfare services. Further evidence is required to fully monetise these savings.

## **Reduced cost of and need for care assistance in the home**

274. Approximately 1.5 million households involve one person or more being cared for, typically by family members or friends or funded through some form of private care. Of these, 400,000 households are receiving state assistance, which averages 10 hours or £100 per week, or £5,200 per year. The majority of these households will include a reference person over 75 or a disabled people.
275. Where such a household occupies a Category 2 home, they are less likely to need assistance to overcome the design of the home (eg to be assisted in bathing or toileting); are likely to be able to be more independent in moving in and out of the home and will find it much cheaper (and will therefore be more likely) to put in place suitable adaptations. All of this will reduce the likelihood or extent of care required. Further research is needed to fully establish the value of these benefits.

## **Reduced costs to the health service arising from unsuitable housing and including trips, falls an injury to carers**

276. Independent research by the Building Research Establishment into the likely savings to health services found that;
- “Homes built to current building regulations offer significant health advantages over the average stock, and may provide direct NHS health cost savings per dwelling in excess of £4,000 during a 60-year expected lifespan. Building to the Lifetime Homes Standard could provide an extra £194 of savings over 60 years, or £700 if the potential adaptations to bathrooms and access to a bedroom/bathroom were made.”*
- “When considering the potential cost to society, the savings are likely to be much higher. Using the model, it is suggested that a home built to current building regulations could save £83,000 during a 60-year lifespan, compared to the average for the current stock. Building to the Lifetime Homes Standard could provide a further £1,600 in savings, or £8,600 if the potential adaptations were made.”*

## **Reduced cost or need for adaptations including the need for extensions**

277. Category 2 (accessible and adaptable) and Category 3 (wheelchair user) housing are designed in such a way as to significantly reduce the need for or extent of adaptations required to meet peoples changing needs over time. This saves money by avoiding the cost of adaptations, or makes adaptation cheaper, but further evidence of these benefits in practice is needed to in order to establish their value .

## **Reduced cost of removing adaptations**

278. Category 2 properties require less in the way of adaptations, and as a consequence there will also be a reduced cost in removing adaptations at the point that they are no longer required. It is very rare that specific adaptations – such as rails, hoists, stair lifts etc – are retained once the occupant who require the adaptations has left that property.

## **Reduced administration costs in re-housing older or disabled people**

279. Where it is possible to avoid re-housing older or disabled people a saving is possible against administrative costs incurred. These were estimated by DCLG as being in the order of £650 per household in 2008.
280. These benefits have not been monetised as part of this impact assessment.

## **Social Benefits of Security standards**

281. Crime reduction strategies for housing design can be split into two elements; the first is crime prevention through environmental and spatial design. The second is the physical security of the buildings.
282. The planning system remains best equipped to address environmental and spatial elements of crime prevention and this is reflected in the National Planning Policy Framework and the supporting policy guidance – the proposals under consideration in this Impact Assessment will not change this guidance.
283. Building Regulations are more suited to focus on physical security. The proposed new requirement provides that doors and windows would meet the PAS 24 standard. Whilst this does not entirely replicate the Secured By Design requirements it is widely acknowledged amongst security experts that properly specified doors and windows contribute the lion share of burglary reduction currently which can be achieved by making buildings more resistant to unauthorised or forced entry.
284. There is a substantive body of evidence that shows that good design can significantly reduce the rate of burglary. However, attempts to quantify the potential reduction in crime have produced varying results. The estimated range of effectiveness of the Secured by Design scheme in reducing burglaries from the literature is a reduction of 25-70% [1,2 & 3].
285. Cost benefit analysis has been undertaken to assess the social impact of the policy change using the following assumptions;
- It is assumed that 24 burglaries per 1000 would occur, which is the current average for England and Wales.
  - The value of a burglary avoided has been estimated by the Home Office [4]. Converted to 2014 prices, this values a burglary avoided at £4,248.
286. For the purposes of this assessment it is assumed that physical security standards reduce burglary in a range of 20%-50% and that this protection will last for 25 years, the typical lifetime of a door or window.
287. Given the policy assumptions this suggests a present value benefit over the 10 years of the appraisal period for the Do nothing of £200-£500m with a present value build and process cost of £224m. This result overall in the do nothing option having a net present value benefit of between minus £24m and plus £277m
288. The new Part Q standard is designed to ensure that the most effective security elements of the Secured by Design standard, relating to windows and doors, are retained. If it is assumed that this therefore delivers the same burglary reduction then the new mandatory Part Q will deliver present value benefits of between £390m and £975m with associated present value build and process costs of £117m. This would achieve a net present value benefit of between £273m and £858m.

289. By comparison, applying Part Q as an optional approach, the present value benefit of £200m-£500m over 10 years will be achieved at a build and process cost of £72m. This results in a net present value benefit of between £128m and £429m.
290. If it is assumed as a sensitivity that the new standard is slightly less effective, reducing burglary by say 2% less than full secured by design then the present value benefit for the mandatory application of Part Q falls to between £351m and £935m, after subtracting present value costs the net present value benefit falls to between £234m and £819m.

## 291. References

- 1 Caledonian Environment Centre (2009). *Secured By Design Impact Evaluation, Key Findings*. Glasgow Caledonian University. April 2009.
- 2 Vollaard, B. & Ours, J. C. (2011). *Does Regulation of Built-in Security Reduce Crime? Evidence from a Natural Experiment*. The Economic Journal 121 (May), 485-504.
- 3 Armitage R. (2013) *Crime Prevention through Housing Design: Policy and Practice*. Palgrave Macmillan: Crime Prevention and Security Management Book Series.
- 4 Sam Brand and Richard Price (2000) *Home Office Research Study 217 The economic and social costs of crime: Research, Development and Statistics Directorate, Home Office*

## Social benefits of space standards

292. Space standards are typically intended to ensure that new dwellings provide a reasonable level of internal space to undertake typical day to day activities, at a given level of occupancy. For instance, an allowance is made for a given number of people to be able to eat together in dining areas, socialise in living spaces together, and for adequate storage in kitchens and elsewhere in the property. Space standards also commonly require minimum floor to ceiling heights, and minimum size for bedrooms.
293. Overall these features are intended to ensure that new homes provide a flexible and high quality environment capable of responding to occupants needs and supporting a high quality of life. There are a range of social benefits that are purportedly derived from the application of this approach.

## Willingness to pay

294. The primary social benefit of space standards is a general aspiration amongst home buyers for more space. Whilst this is not necessarily the overriding factor in a purchasers decisions to buy a new home, it is certainly the case that where they are able to do so, (i.e. can afford to do so) home buyers are willing to pay more for a larger property, all other factors being equal (e.g. location, property type etc). EC Harris have set out the extent to which this 'willingness to pay' works in their cost report accompanying this impact assessment. The willingness to pay is however reliant on larger homes being viable within a given localised housing market.

## Improved cohesion within family units

295. Evidence gathered in support of the London Plan requirement for space standards identifies a range of benefits that families derive from good standards of space in the home<sup>12</sup>. These include better ability to socialise with family members and guests; improved storage; improved space for solitary activities (studies or pastimes); greater flexibility in arranging rooms to meet different preferences; the ability to work from home; more space for managing waste and recycling and improved day light and ventilation.<sup>13</sup>

## General Health and Wellbeing

296. Research into the health and wellbeing benefits of space standards is on-going<sup>14</sup>, but social benefits are proposed to be derived in two particular respects; firstly, there are reductions in family stress and improvements in familial relationships, often arising from improved opportunities for privacy and isolation within the dwelling. Secondly, space standards help to mitigate impacts from overcrowding, particularly relating to mental health (reducing depression) giving children room to play within the home and helping to ensure a good nights sleep<sup>15</sup>.

297. There is also some research into the benefit of higher ceiling heights in improving indoor air quality and dealing with risks from over-heating. Given that predictions of climate change suggest a long term trend towards longer periods of higher temperature, this may become an increasingly important design tool in offsetting the discomfort and health risks (including increased mortality) from periods of overheating.

## As an adjunct to higher density development

298. Planning authorities are often concerned about the sustainability of high density development, given the precedent of historic failures in this type of housing. Space Standards are seen by some planning authorities as a way of ensuring that homes provide sufficient internal space to offset the reduced public amenity space in areas of higher density. Space Standards could be argued to support a higher number of homes being delivered from a limited amount of land, and there is evidence of planning authorities actually permitting higher density where space standards are applied<sup>16</sup>.

## Reducing the risk of market failure

299. The UK builds some of the smallest homes in Europe<sup>17</sup>, and there is a long term downward trend in the size of new homes in the UK. There are concerns as to the longevity of smaller

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<sup>12</sup> Mayor of London (2009) **Draft London Housing Design Guide**, Mayor of London: London

Mayor of London (2010) **Evidence Base for the London Housing Strategy**, November 2009, Mayor of London: London

<sup>13</sup> **HATC 2006 for GLA; Reynolds for shelter 2005**

<sup>14</sup> Petticrew, M., Kearns, A., Mason, P. and Hoy, C. (2009) The SHARP study: a quantitative and qualitative evaluation of the short-term outcomes of housing and neighbourhood renewal, in **BMC Public Health**, 9, 415, no page numbers

<sup>15</sup> Reynolds, L. (2005) **Full House? How Overcrowded Housing Affects Families**, Shelter: London

<sup>16</sup> Gallent, N., Madeddu, M. and Mace, A. (2010) **Internal housing space standards in Italy and England: reviewing the 'conditions' of regulation**, **RICS FIBRE Series**, February 2010, RICS Education Trust: London

<sup>17</sup> Evans, A. and Hartwich, O.M. (2005) **Unaffordable Housing: Fables and Myths**,

housing where these are crammed on to sites and address only a narrow segment of the market place, because having a narrow market appeal increases the risk that these homes will be less desirable in the longer term. Space Standards provide one approach to offsetting these risks.

## Reducing Anti-Social Behaviour

300. Research is on-going into the links between poor quality housing (of which limited internal space is one contributory criteria) and evidence of the link between anti-social behaviour and smaller homes is primarily empirical<sup>18</sup>. However, poor internal space is linked to poorer health and lower educational attainment. It is also suggested that where there is insufficient space for adults and younger family members to inhabit a property comfortably, there are increased risks of children and young adults being displaced into the external environment where they are more vulnerable to falling into patterns of anti-social behaviour.

## Adaptability and Inclusion

301. Internal space is a key criteria in relation to how accessible a home is, and how capable it will be to adapt to a range of changing household need over time. Where people suffer permanent or temporary impaired mobility, larger floor plates offer inherently greater potential for adaptation to meet specific needs. These benefits also relate to accessible housing standards where there is a component of increased space particular in circulation zones and bathrooms, and there is some cross over between space standards and access standards in this respect.

## Summary –social benefits of space standards

302. Beyond willingness to pay, it is difficult to monetise and fully evidence the social benefits of space standards. Further work would be required to do so. Additional research on space standards has been undertaken exploring consumer attitudes to new development, and to features of typical contemporary homes, and this tends to suggest that there is an appetite amongst homeowners for decent internal space, increased internal storage, and higher levels of daylighting<sup>19</sup>.

303. However, given the variation in local housing markets, and Governments decision that application of space standard's will remain a local decision, analysis of the balance of these benefits will remain for consideration as one part of local authority planning policy development and review.

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Policy Exchange: London

<sup>18</sup> Department for Education and Skills (2007) **Preventing Crime and Anti-Social Behaviour**, study by the Newcastle Centre for Family Studies at the University of Newcastle Upon Tyne, DfES: London;

**Crime and Anti-Social Behaviour**, study by the Newcastle Centre for Family Studies at the University of Newcastle Upon Tyne, DfES: London

<sup>19</sup> CABE (2009) **Space in Homes: What Residents Think**, Commission for Architecture and the Built Environment: London

Shelter, April 2013; **Little Boxes, Fewer homes**

RIBA 2012 **The Case for Space**

<http://www.architecture.com/Files/RIBAHoldings/PolicyAndInternationalRelations/HomeWise/CaseforSpace.pdf> and without Space and Light (RIBA).

RIBA/ IPSOS Mori **The Way We Live Now** 201

304. Many of the benefits associated with Space Standards will not qualify as first order of impact benefits. These benefits have not been monetised as part of this impact assessment.

## **Waste Storage**

305. Ensuring that waste storage is properly considered in new development (and where existing properties are converted into residential use) delivers an important range of benefits. Potential health risks from poorly contained household waste are reduced, and Quality of life for local people is considerably enhanced by ensuring that undesirable odours and debris do not blight the streetscape. It is also important that visual amenity of streets is suitably protected..

306. There are also potential monetary savings. Local authority waste management operatives and contractors are able to more easily access refuse containers where storage is well designed, reducing costs and enabling waste collection to be completed more quickly . The risk of accidental spillage, waste littering streets and verges, or waste being attacked by local foxes, other feral animals and vermin is also considerably reduced. Savings are also likely to be captured where bins and waste storage make it easier for households to manage waste in accordance with local policies, particular with respect to the recycling of materials.

307. These benefits have not been monetised as part of this impact assessment.

# Wider Impacts

## Small Firms Impact

308. The housing standards package is classed as a deregulatory package as there are significant savings to business generated as a whole. The impact assessment for the housing standards review clearly demonstrates this, with a saving to business of £130.1m (2009 prices).
309. The reduction in the number of and simplification of local standards is likely to have a disproportionately beneficial impact on smaller homebuilders which typically work on small sites. Differences are especially large for process costs.
310. For instance the process cost for Code for Sustainable Homes Level 4 is estimated in Table 11 of the EC Harris Cost Report as £107 per dwelling for a large development or £686 for a small development.
311. Process costs for the Lifetime Homes Standard are estimated in Tables 18-20 of the EC Harris Cost Report as £72 per dwelling for a large development but £372 per dwelling for a small development. The comparable cost for new proposal category 2 is estimated in Tables 46-47 of the EC Harris Cost Report as £46 per dwelling for a large development or £235 per dwelling for a small development. The saving of £26 per dwelling on a large development is much smaller than the £137 per dwelling saving on the large development.
312. The 'per dwelling' process cost of the Code 5/6 water standard is £5 for the large development, and £78 for the small development. For security the per dwelling process cost from the EC Harris Cost Report Tables 5-7, is £10 for the large development but £130 for the small development.
313. These figures illustrate how local standards can often impact disproportionately on small developments.

## Competition

314. It is not considered that the proposal would have a negative impact on competition. Indeed, a degree of standardisation may which may increase potential competition. The simplification may result in smaller and medium sized firms either entering the market and/or building more homes due to the simplification and rationalisation of housing standards. This is because local housing standards are complex, and often overlap or contradict each other, or contradict parts of the Building Regulations themselves which lead to uncertainty, delay and additional process and material costs for house builders. On top of this each local authority requires its own set of housing standards, in isolation from other authorities and national policy which means house builders have to tailor their housing designs to the requirements of each local authorities housing standards.



# Environmental

315. The consultation proposes that the Code for Sustainable Homes is wound down. Some homes currently covered in the Code will be absorbed into the Nationally Described Standards set. Other issues, which relate to wider environment in which the dwelling is constructed, may still be covered in planning policies